



TRANSPORTATION

# Transportation as a Pathway to Higher Education

## About Student Success Toolkits

The Student Success Toolkits from Trellis Strategies provide evidence-based recommendations for colleges and universities to improve student outcomes. The toolkits summarize the latest research in student success and outline practical steps for administrators and practitioners.

## About Trellis Strategies

We are a strategic research and consulting firm dedicated to advancing postsecondary education and strengthening the workforce by delivering unparalleled insights into the modern learner experience, from application through graduation. With over 40 years' experience serving higher education institutions and helping students navigate complex processes, we have the knowledge, insight, and experience to help organizations turn their data into action and action into results.

## About the Author

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## Recommended Citation

Schuette, A. (2023). *Transportation as a Pathway to Higher Education*. Trellis Strategies.



# Student Transportation

Students who are unable to reliably commute to their college campus stand to fall behind in school or drop out altogether. The cost of transportation is prohibitive to many prospective and already enrolled college students; in 2020-2021 transportation costs accounted for nearly 20 percent of the cost of attending college for commuting students,

according to the College Board.<sup>1</sup> What's more, for many students who seek cheaper forms of transportation, like bus or active transit, other issues persist. This toolkit will examine the various problems students face in getting to campus, as well as examine solutions and offer suggestions.

## Key recommendations



**Schools in urban areas or those with parking scarcity may offer transit passes to students cost effectively and produce net benefits while reducing stop-outs.**



**Schools with large proportions of women in their student body may seek to offer additional parking on campus, and work with transit agencies to ensure safety for students.**



**Schools with automotive trades programs may offer free and reduced cost vehicle repairs to students, as these schools often have high proportions of commuter students.**



**Schools in rural and suburban areas, where student housing is more able to be closely located to campus, may choose to incentivize active modes of transportation for students. Schools with high proportions of graduate students, or in cities with high walkability and bikeability may choose to do the same.**



## Transportation Barriers

In 2018, Price and Curtis identified four key transportation barriers for college students: (i) prohibitive cost and affordability; (ii) routes, frequency and schedules; (iii) housing and work proximity; (iv) and reliability and quality.<sup>2</sup> In 2022, 57 percent of undergraduate students in Trellis' Student Financial Wellness Survey reported they would have trouble getting \$500 for an unexpected need within the next month.<sup>3</sup> This highlights the inability of many students to pay high upfront costs for goods and services. However, the cost of transit in many cities is discounted to those who can afford to pay upfront. In Chicago, a CTA day pass, used to access city subway and bus services, costs \$5. Therefore, a student paying for a day pass every day of every month would pay about \$150. A 30-day pass costs \$75.<sup>4</sup> In this way, students able to pay the higher upfront cost, those not living paycheck to paycheck, are able to save in excess of 50 percent on transportation costs. This highlights the affordability problems students face with respect to transit. As James Baldwin once said, "anyone who has ever struggled with poverty knows how extremely expensive it is to be poor."



Only **57%**  
of community college campuses nationwide **HAVE PUBLIC TRANSIT STOPS WITHIN A QUARTER OF A MILE FROM CAMPUS.**

Inconvenient routes, infrequent trips and limited trip scheduling also pose a problem for college students. Only 57 percent of community college campuses nationwide have public transit stops within a quarter of a mile of campus.<sup>5</sup> Furthermore, transit is often planned with the work commuter in mind. Resultantly, college students' schedules may not align with frequent ride times and also may not be served by transit which seeks to transport to business hubs and central business districts.<sup>2</sup> The hub and spoke layout of many transit systems may furthermore complicate the way in which students may utilize transit, and the presence of transit stops does not guarantee their usage is convenient. Barriers to transportation are also not distributed equally among all groups. These barriers disproportionately impact low-income and minority students.<sup>6</sup>



## Transit Passes

Research on transportation in post-secondary education, with respect to solutions, generally focuses on a few things. The first is bus transit, and discounted or free passes for bus transit access. Most research on university transit passes has identified benefits of offering free or reduced cost transit passes to students. A 2001 study found that offering transit passes to students may reduce the cost of attending college by \$2,000, and only cost the university \$30 per student, on average.<sup>7</sup> This is possible given that,

when the university buys transit passes in bulk, they receive a discount on those passes. Furthermore, recent research has found that students with access to public transit through a university pass earn more credits in their first semester and first year of school. These students graduate at higher rates and are 6 percent more likely to be retained. Crucially, this also applies to part-time students, who generally do not receive a transit pass from their school.



**A 2001 STUDY FOUND THAT OFFERING TRANSIT PASSES TO STUDENTS MAY REDUCE THE COST OF ATTENDING COLLEGE BY \$2,000, AND ONLY COST THE UNIVERSITY \$30 PER STUDENT, ON AVERAGE**



## Driving and Parking

Research also commonly investigates student driving and parking decisions, specifically the circumstances under which students would substitute driving for other forms of transportation. Broadly, research finds that females are more likely to drive to campus than are males, as are older students.<sup>9-15</sup> Female students are also less likely to respond to changes in weather, commute time, parking cost and gas prices when choosing a transportation mode than males.<sup>11</sup> Females also cite safety concerns as a reason for driving to school more frequently than males.<sup>10,11,16,17</sup> Delmelle and Delmelle also find that the number of children a student has is positively correlated with driving, and negatively correlated with walking and biking.<sup>11</sup>

Several studies have examined the effect of parking fees in higher education on student’s decision to drive to school. Increased parking fees have been repeatedly found to increase students substituting driving for transit.<sup>11,17-19</sup> However increased parking fees—and cash-out programs that offer compensation for not driving to a location—have the potential to change behavior adversely. Increasing fees substantially may lead to students changing schools, as was seen in visitors to central business districts, who, when faced with substantially higher parking costs, chose to shop and do business elsewhere.<sup>20</sup>

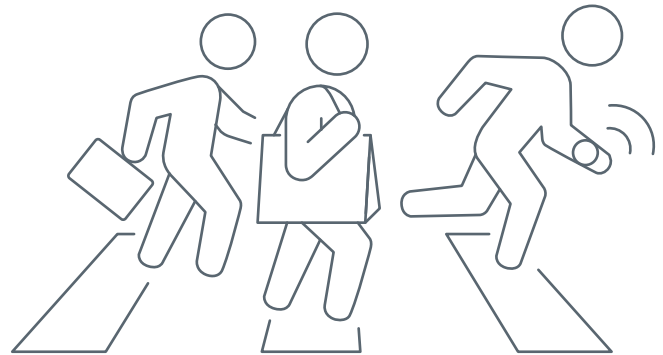


**FEMALES CITE SAFETY CONCERNS AS A REASON FOR DRIVING TO SCHOOL more frequently than males.**



## Active Transportation

A large body of research exists with respect to active modes of transportation in the context of higher education. Research has identified that graduate students are more likely to walk or bike to campus than undergraduates, as are males compared to females.<sup>11,21</sup> Additionally, walking has been identified as the dominant mode of transportation for students living up to 1.5 miles from a small-town campus, which equates to roughly a 30-minute walk. Car usage was found to increase most substantially between walk times of 10 to 15 minutes.<sup>11</sup> Active modes have also been found related to weather, student habits and sidewalk availability.<sup>10,21-23</sup> Furthermore, Shannon et al. identified that reducing real and perceived bicycle travel time can influence transportation mode changes for students.<sup>19</sup> This is particularly relevant for schools in urban areas, where the external cost of cars is high;<sup>24</sup> for example, the cost of parking spaces in downtown environments is made higher by the value of all other things that could be occupying that space instead of parking.



**WALKING HAS BEEN IDENTIFIED AS THE DOMINANT MODE OF TRANSPORTATION FOR STUDENTS LIVING UP TO 1.5 MILES FROM A SMALL-TOWN CAMPUS, WHICH EQUATES TO ROUGHLY A 30-MINUTE WALK.**

# CASE STUDY

## Rio Hondo College

Rio Hondo College is a Hispanic-serving, commuter community college located in Whittier, CA, in the southeastern corner of Los Angeles County. As of 2022, Rio Hondo had over 20,000 enrolled students,<sup>25</sup> over 80 percent of which were Hispanic/Latino. Close to 90 percent of students receive some form of financial aid.

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In summer 2020, Rise, a student-led advocacy group in Los Angeles, CA, launched a campaign for free public transportation for college students in Los Angeles. The campaign was led by two students who experienced homelessness while in college. Over the course of Rise's campaign, 500 students shared their stories about struggling to afford transportation with LA Metro. In addition, several students testified about their experiences with transportation during LA Metro hearings.

In 2016, Rio Hondo, and several other local schools, partnered with LA Metro to create the U-Pass. The U-Pass offers free and reduced cost transit options to all enrolled students, regardless of the number of credits they are taking. The U-Pass is a part of GO RIO, the college's broader transportation program. All students must do is complete a first-time user survey and place a U-Pass sticker on their Rio Hondo ID. GO RIO U-Passes can be used on El Monte Transit, Foothill Transit, L.A. County Public Works' Sunshine Shuttle, Metro, Montebello Bus Lines, and Norwalk Transit.<sup>26</sup>

In 2021, Clay and Valentine examined the impact of U-Pass implementation on student success outcomes. Propensity Score Matching (PSM) was used to generate comparison groups statistically similar to the treatment group of students who received

the U-Pass. Overall, they found that, U-Pass receiving students were five percentage points more likely than non U-Pass receiving students to be enrolled in the subsequent semester, and five percentage points more likely to be enrolled one year later in the subsequent fall semester. Perhaps more important, according to Clay and Valentine, "students who received the U-Pass in the first semester were significantly more likely than their peers to have earned a credential during the study period. While the credential attainment rate for students in the matched comparison group was 13.1 percent, it was 15.3 percent for students with the U-Pass... Further, associate degree attainment rates were three percentage points higher among students with the U-Pass compared to students in a matched comparison group, representing a 27 percent gain in the likelihood of earning an associate degree."<sup>8</sup>



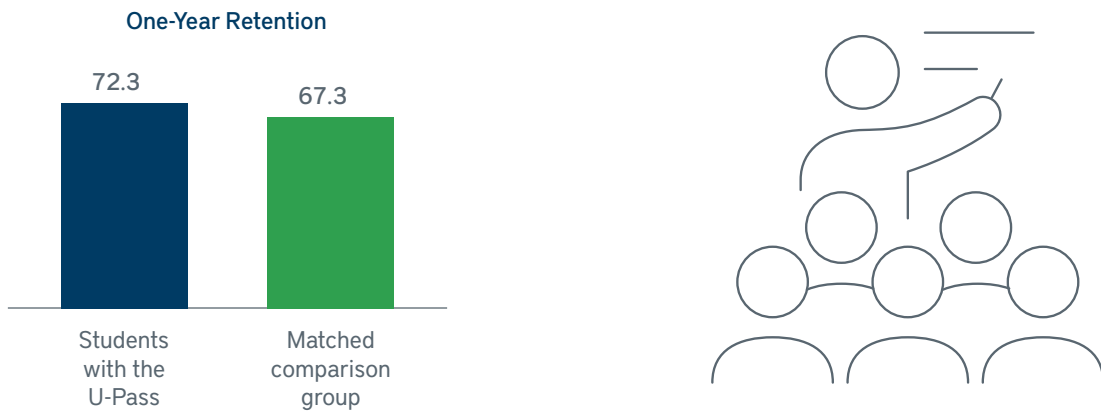
### Rise Student Testimonials

*"Gillian struggles to get to and from her Rio Hondo classes. She doesn't have a car and commuting by bus takes more than an hour. If buses are delayed, she is late to class. While driving to campus would be quicker and more reliable, buying a car is not financially feasible for Gillian. Her parents take out loans just to cover her tuition, and she cannot handle the added expense of a car payment, car insurance, or gas."*

*"Since the pandemic began, Colin has struggled to earn enough money to get to and from class and work. Early in the pandemic, Colin's hours at work were cut to just eight hours a week. When Colin tried to secure a new job with better hours, doing so was tough. He was stuck in a lose-lose situation; without a job, Colin couldn't afford transportation, but without transportation, Colin couldn't secure a job. At a breaking point, Colin nearly stopped out of college."*

Clay & Valentine, "Impact of Transportation Supports on Students' Academic Outcomes"<sup>8</sup>

Figure 1: Percentage of Students Who Remained Enrolled One Year Later



Clay & Valentine, "Impact of Transportation Supports on Students' Academic Outcomes"

Figure 2: Percentage of Students Who Attained a Credential or Associate Degree



Clay & Valentine, "Impact of Transportation Supports on Students' Academic Outcomes"

From this case study, we learn that low-cost transportation has a tangible impact on student success, particularly for those students most financially vulnerable. College represents a high cost to these students,

and for many who are already doing all they can to make ends meet, transportation is one additional factor that, when complicated, poses a real threat to retention and completion. Colleges and universities that

work with students, who know their student's transportation patterns and work to make them more efficient, stand to keep their students on campus at higher rates, and graduate them in a similar fashion.

# Where to start?



**In conclusion, the research highlighted in this review lends itself to a few important takeaways.**

1

Schools in urban areas, in areas where parking is scarce, or with large proportions of students who do not drive to school may find that offering transit passes to their students is a cost-effective way to prevent stop-outs and transfers. These transit passes are often cheaper for the school to buy in large amounts and can make a drastic difference for students financially. Many students struggle with the affordability of college, and reducing this number by nearly 20 percent can enable students to invest in their education more soundly.

2

Schools with a large proportion of female students may choose to prioritize on-campus parking options for students, and work with local transit operators to ensure safe public transit options for students. This may include offering evidence that reduces common stigma surrounding the safety of public transit. Working to reduce the travel time associated with public transport may furthermore reduce the burden on schools to provide parking resources to their students. For instance, collaborating to create more direct routes to campus, in favor of hub-based routes.

3

Finding a balance between parking fees that encourage other forms of transportation, while not pricing out students who are more comfortable driving, is a crucial equilibrium to manage.

4

Schools in rural and suburban areas where student housing is more closely located to campus, further incentivizing these active modes of transportation for commuting to and from campus may be preferred. However, ensuring the availability of parking for commuter students, and students not in the immediate proximity of campus, remains important.

5

Schools with automotive trades programs may offer free and reduced cost vehicle repairs to students, as these schools often have high proportions of commuter students.



## References

- 1 College Board. (2021). *Living Expense Budget 2020-21*. <https://professionals.collegeboard.org/higher-ed/financial-aid/living-expense/2020>
- 2 Price, D., & Curtis, D. (2018). *Overcoming transportation barriers to improve post-secondary student success*. DVP-PRAXIS.
- 3 Fletcher, C., Cornett, A., Webster, J., & Ashton, B. (2023). *Student Financial Wellness Survey report: Fall 2022*. Trellis Company. [https://www.trelliscompany.org/wp-content/uploads/2023/05/SFWS-Aggregate-Report\\_FALL-2022.pdf](https://www.trelliscompany.org/wp-content/uploads/2023/05/SFWS-Aggregate-Report_FALL-2022.pdf)
- 4 Chicago Transit Authority. (2023, February 20). *Fare Information*. <https://www.transitchicago.com/fares/#passes>
- 5 Seldin/Haring-Smith Foundation. (2021). *Community and Technical Colleges Transit Map*. Civic Mapping Initiative. [www.civicmaps.org/community-technical-college-transit-map](http://www.civicmaps.org/community-technical-college-transit-map)
- 6 Elengold, K., Dorrance, J., Martinez, A., Foxen, P., & Mihas, P. (2021). Dreams Interrupted: A Mixed-Methods Research Project Exploring Latino College Completion. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3920591>
- 7 Brown, J., Hess, D. B., & Shoup, D. (2001). Unlimited Access. *Transportation*, 28, 233–267.
- 8 Clay, J. R., & Valentine, J. L. (2021). *Impact of Transportation Supports on Students' Academic Outcomes: A Quasi-Experimental Study of the U-Pass at Rio Hondo College*. The Hope Center for College, Community, and Justice; DVP-PRAXIS LTD.
- 9 Soria-Lara, J. A., Marquet, O., & Miralles-Guasch, C. (2017). The influence of location, socioeconomics, and behaviour on travel-demand by car in metropolitan university campuses. *Transportation Research Part D: Transport and Environment*, 53, 149–160. <https://doi.org/10.1016/j.trd.2017.04.008>
- 10 Rodriguez, D. A., & Joo, J. (2004). The relationship between non-motorized mode choice and the local physical environment. *Transportation Research Part D: Transport and Environment*, 9(2), 151–173. <https://doi.org/10.1016/j.trd.2003.11.001>
- 11 Delmelle, E. M., & Delmelle, E. C. (2012). Exploring spatio-temporal commuting patterns in a university environment. *Transport Policy*, 21, 1–9. <https://doi.org/10.1016/j.tranpol.2011.12.007>
- 12 Zhan, G., Yan, X., Zhu, S., & Wang, Y. (2016). Using hierarchical tree-based regression model to examine university student travel frequency and mode choice patterns in China. *Transport Policy*, 45, 55–65. <https://doi.org/10.1016/j.tranpol.2015.09.006>
- 13 Nash, S., & Mitra, R. (2019). University students' transportation patterns, and the role of neighbourhood types and attitudes. *Journal of Transport Geography*, 76, 200–211. <https://doi.org/10.1016/j.jtrangeo.2019.03.013>
- 14 Klöckner, C. A., & Friedrichsmeier, T. (2011). A multi-level approach to travel mode choice– How person characteristics and situation specific aspects determine car use in a student sample. *Transportation Research Part F: Traffic Psychology and Behaviour*, 14(4), 261–277. <https://doi.org/10.1016/j.trf.2011.01.006>
- 15 Zhou, J. (2016). Proactive sustainable university transportation: Marginal effects, intrinsic values, and university students' mode choice. *International Journal of Sustainable Transportation*, 10(9), 815–824. <https://doi.org/10.1080/15568318.2016.1159357>
- 16 Bamberg, S., & Schmidt, P. (2003). Incentives, Morality, Or Habit? Predicting Students' Car Use for University Routes With the Models of Ajzen, Schwartz, and Triandis. *Environment and Behavior*, 35(2), 264–285. <https://doi.org/10.1177/0013916502250134>
- 17 Sultana, S. (2015). Factors associated with students' parking-pass purchase decisions: Evidence from an American University. *Transport Policy*, 44, 65–75. <https://doi.org/10.1016/j.tranpol.2015.07.002>
- 18 Mohammadzadeh, M. (2020). Exploring tertiary students' travel mode choices in Auckland: Insights and policy implications. *Journal of Transport Geography*, 87. <https://doi.org/10.1016/j.jtrangeo.2020.102788>
- 19 Shannon, T., Giles-Corti, B., Pikora, T., Bulsara, M., Shilton, T., & Bull, F. (2006). Active commuting in a university setting: Assessing commuting habits and potential for modal change. *Transport Policy*, 13(3), 240–253. <https://doi.org/10.1016/j.tranpol.2005.11.002>
- 20 Shifftan, Y., & Burd-Eden, R. (2001). Modeling Response to Parking Policy. *Transportation Research Record: Journal of the Transportation Research Board*, 1765(1), 27–34. <https://doi.org/10.3141/1765-05>
- 21 Heinen, E., van Wee, B., & Maat, K. (2010). Commuting by Bicycle: An Overview of the Literature. *Transport Reviews*, 30(1), 59–96. <https://doi.org/10.1080/01441640903187001>
- 22 Nankervis, M. (1999). The effect of weather and climate on bicycle commuting. *Transportation Research Part A: Policy and Practice*, 33(6), 417–431. [https://doi.org/10.1016/S0965-8564\(98\)00022-6](https://doi.org/10.1016/S0965-8564(98)00022-6)
- 23 Whalen, K. E., Páez, A., & Carrasco, J. A. (2013). Mode choice of university students commuting to school and the role of active travel. *Journal of Transport Geography*, 31, 132–142. <https://doi.org/10.1016/j.jtrangeo.2013.06.008>
- 24 Shoup, D. C. (1999). The trouble with minimum parking requirements. *Transportation Research Part A: Policy and Practice*, 33(7–8), 549–574. [https://doi.org/10.1016/S0965-8564\(99\)00007-5](https://doi.org/10.1016/S0965-8564(99)00007-5)
- 25 Institute of Education Sciences. (2022). *IPEDS Data Feedback Report: Rio Hondo College*. <https://nces.ed.gov/ipeds/use-the-data/>
- 26 Rio Hondo College. (n.d.). *Frequently Asked Questions*. Retrieved August 16, 2023, from <https://www.riohondo.edu/gcr/frequently-asked-questions/>