

# International Students in Missouri: Countering Enrollment Declines, Retaining High-Skilled Graduates, and Supporting Local and Regional Economies

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## Introduction

Tens of thousands of international students have studied at Missouri's colleges and universities, making invaluable academic and cultural contributions to campus and community life. Perhaps less well-known have been the significant contributions that international students have also made to state and local economies. In recent years, the number of international students studying in Missouri has been on the decline (a trend that pre-dates the pandemic), and as a result local economies have potentially lost out on millions of dollars in revenue. The focus of this paper is first to explore the changing enrollment trends of international students in Missouri leading up to the COVID-19 pandemic and the impact on economies and jobs. Next, we present descriptive data on where Missouri's international students participating in the post-graduation work-experience program known as Optional Practical Training (OPT) have worked statewide. We then look at the ways in which colleges and universities have promoted international student employment through an analysis of schools' international admissions and recruitment materials. Our research suggests opportunities for schools and localities to work together strategically to attract would-be students—and to cultivate and retain would-be employees. We propose that schools should encourage and facilitate wider participation in practical training within Missouri by better leveraging their respective geographic advantages vis-a-vis proximity to labor markets, which in turn can provide a competitive advantage in admissions efforts.

## The Numbers

### Enrollment Trends in Missouri

To be sure, the COVID-19 pandemic has had a major impact on international student enrollment numbers around the country.<sup>1</sup> According to a survey by the Institute of International Education in 2020, new international student

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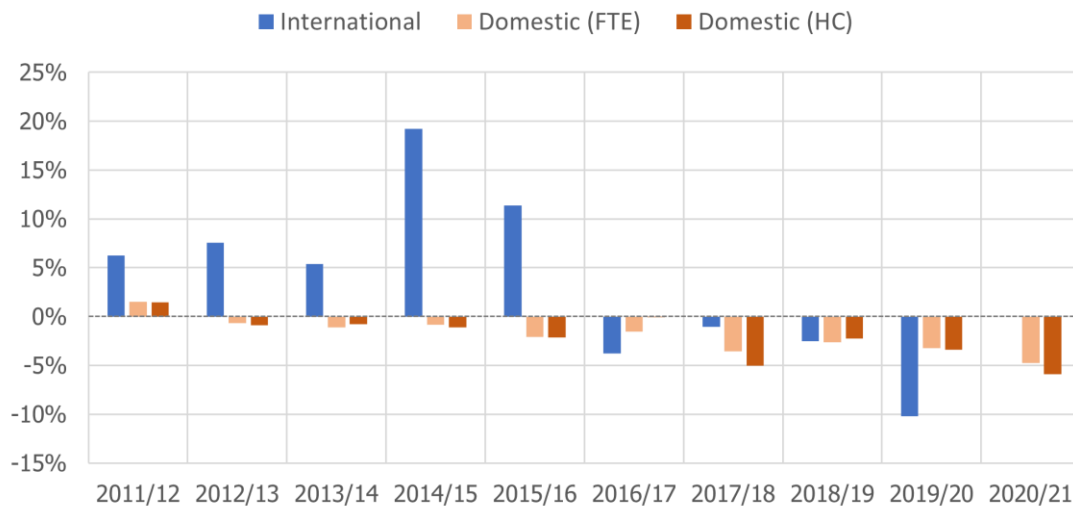
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<sup>1</sup> Depending on the time of year and the metrics involved, enrollment numbers may differ and change over the course of a year. Counts of international students can be further complicated because the data might include both students actively attending class, as well as students who have graduated but who are participating in Optional Practical Training program.

enrollments in the United States dropped a precipitous 43 percent between the 2019 and 2020 academic years.<sup>2</sup> Subsequent surveys showed an uptick for Fall 2021,<sup>3</sup> but for many schools overall international enrollment numbers are unlikely to return to pre-pandemic highs even after the pandemic is brought under control.

Well before the pandemic, new international student enrollments across the United States and within Missouri had been steadily declining. Even in good times, national enrollment trends for international students have been uneven. Prior to the pandemic, only a handful of states—e.g., Florida, Georgia, Maryland, Massachusetts, New York, and North Carolina—were seeing regular yearly enrollment increases.<sup>4</sup> Everywhere else, numbers were dropping. In 2019, Missouri ranked 18th among US states with 20,140 international students, down 10 percent from the previous year and down more than 15 percent from 2015 when a record 23,767 international students were studying in the state.<sup>5</sup> Moreover, this trend has coincided with the nearly decade-long downward trend in Missouri's domestic enrollment (Figure 1). But whereas domestic enrollment woes are largely connected to changing demographics, multiple factors contributed to the pre-pandemic declines in international numbers, including a reduction in some large government-sponsored student programs, low enrollment in English language programs, a rise in visa denials, and increased competition among higher education providers globally.<sup>6</sup> Less conclusively, international perceptions that the United States was unwelcome due to Trump-era immigration policies<sup>7</sup> or unsafe due to recurrent and widely-reported gun violence might have had adverse effects, as well.



**Figure 1:** Shows the percent change in enrollments from previous year at Missouri's colleges and universities (2011/12 - 2020/21). Note: FTE=Full Time Enrollment, HC=Head Count. Data Source: NAFSA and DHEWD<sup>1</sup>

<sup>2</sup> Julie Baer and Mirka Martel, *Fall 2020 International Student Enrollment Snapshot* (New York, NY: Institute of International Education, November 16, 2020), accessed July 16, 2021, <https://opendoorsdata.org/wp-content/uploads/2020/11/Fall-2020-Snapshot-Report-Key-Findings.pdf>.

<sup>3</sup> Karin Fischer, "After Deep Drops, International Applications Rebound, Survey Finds," *Chronicle of Higher Education*, June 10, 2021, accessed July 16, 2021, <https://www.chronicle.com/article/after-deep-drops-international-applications-rebound-survey-finds>.

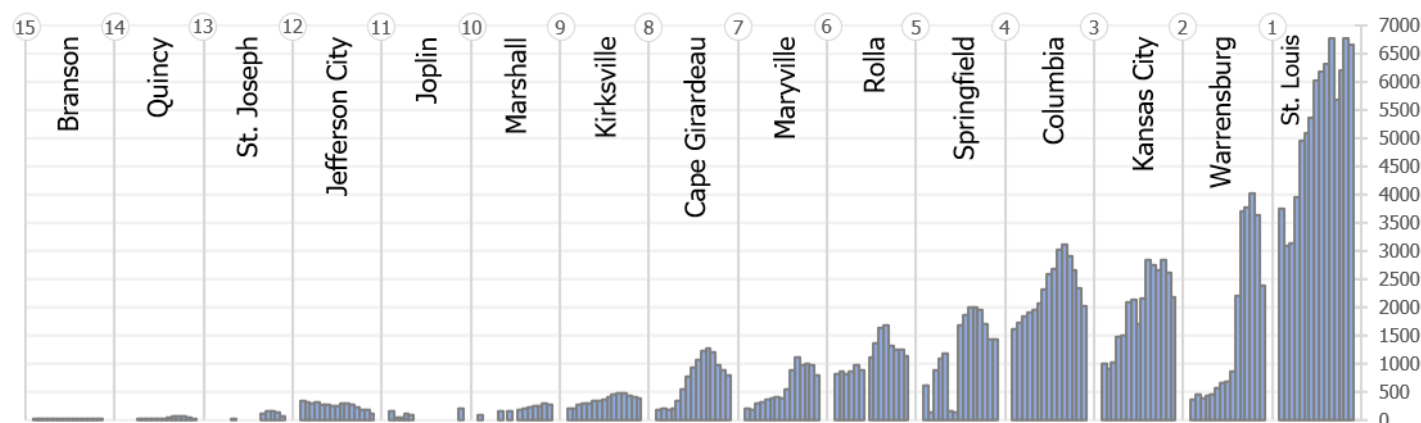
<sup>4</sup> Open Doors, *International Students* (2020), accessed May 1, 2021, <https://opendoorsdata.org/data/international-students/>.

<sup>5</sup> Open Doors, *Fact Sheets-Missouri* (2020), accessed May 1, 2021, [https://opendoorsdata.org/fact\\_sheets/missouri/](https://opendoorsdata.org/fact_sheets/missouri/).

<sup>6</sup> NAFSA, *Factors Influencing International Student Enrollment Growth and Decline*, last modified March 2021, <https://www.nafsa.org/professional-resources/browse-by-interest/factors-influencing-international-student-enrollment>.

<sup>7</sup> James McKivigan, "Effect of Federal Policy Changes on International Students Pursuing Higher Education Studies in the United States," *Higher Education Research* 5, no. 2 (April 2020): 60-67, accessed July 16, 2021, <https://doi.org/10.11648/j.her.20200502.14>; Eric Bellemore and Nicole Hacker, "'The Trump Effect': How Does it Impact International Student Enrollment in US Colleges?" *Journal of Critical Thought and Praxis* 10, no. 1 (2020): 1-11, accessed July 16, 2021, <https://doi.org/10.31274/jctpr.11588>.

When broken down by metropolitan and micropolitan areas (Figure 2), we can see how most areas in Missouri peaked as recently as a few years ago, while a few have continued to attract students.<sup>8</sup> St. Louis stands out as the clear leader in international student enrollments. But St. Louis also contains the most colleges and universities of any area in Missouri—nearly twice as many as Kansas City. In all areas, the recent trend has been either stasis or decline.



**Figure 2:** Shows the yearly international student enrollments in Missouri across fifteen years (2005/06 - 2019/20), by metro/micro areas. Bar gaps or drastic drops equal data missing for that year. Note: Some data may combine both classroom and OPT numbers. Data Source: IIE

## Enrollment Benefits

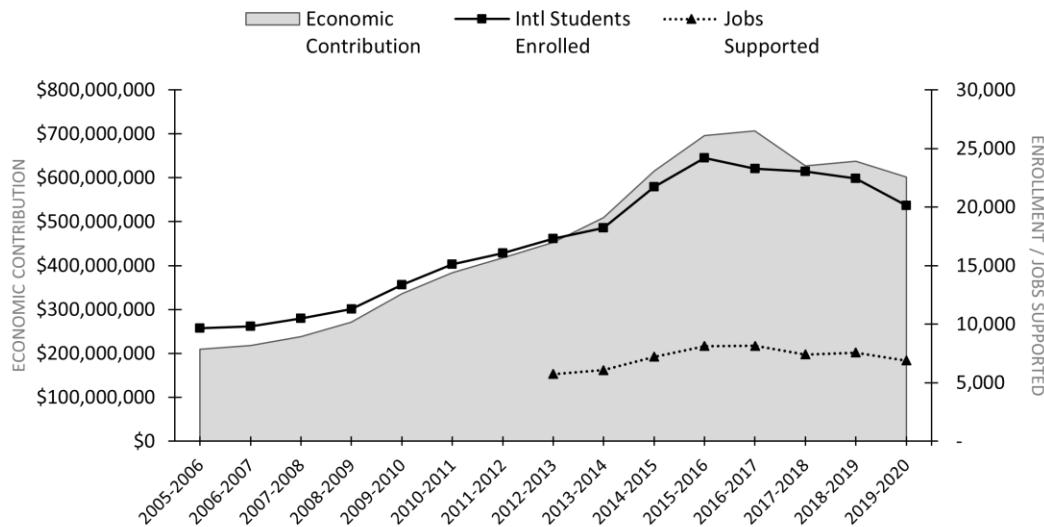
First and foremost, international students make invaluable academic and cultural contributions to their local communities, and fewer international students on campus means a loss of vibrancy and diversity in student and community life. But for most Missourians, the benefits of international students studying in the state are likely felt by way of the economy. As recently as 2019, despite international student enrollment in Missouri having dropped to its lowest point since 2013, it still generated \$601,160,483 for the state and supported nearly 7,000 jobs, according to data compiled by NAFSA: Association of International Educators (Figure 3).<sup>9</sup>

In order to gain a clearer understanding of the economic contribution of international students studying in Missouri pre-pandemic, we analyzed data from NAFSA's International Student Economic Value Tool (which draws from data sets from the US Department of Education, US Department of Commerce, and Institute of International Education, among other sources).<sup>10</sup> NAFSA produces yearly state reports on the economic contribution from, and jobs supported by, international student enrollment.

<sup>8</sup> "Open Doors: International Students at All Institutions, 2001/02-2019/20," *Institute of International Education*, retrieved from <http://www.iie.org/opendoors>.

<sup>9</sup> NAFSA, *Missouri: Benefits from International Students* (2020), accessed May 1, 2021, <https://www.nafsa.org/isev/reports/state?year=2019&state=MO>.

<sup>10</sup> Jason Baumgartner, "The Economic Value of International Student Enrollment to the US Economy: Methodology," NAFSA, November 2020, accessed May 1, 2021, <https://www.nafsa.org/sites/default/files/media/document/isev-methodology-2020.pdf>.



**Figure 3:** Shows Missouri's total international student enrollment, as well as the estimated economic contribution and jobs supported by international student enrollment, across fifteen years (2005/06 - 2019/20) Data Source: NAFSA

However, the NAFSA reports are primarily advocacy tools, with the data broken down by congressional districts. As yet there is little research about how the NAFSA economic value data relate to specific urban areas. To that end, we repurposed the NAFSA data to show the distribution of economic contribution of international student enrollment based on Census Based Statistical Areas (CBSAs). Our analysis charts fifteen years of economic data and eight years of jobs data by metropolitan and micropolitan areas in Missouri leading up to the beginning of the pandemic in 2020.<sup>11</sup>

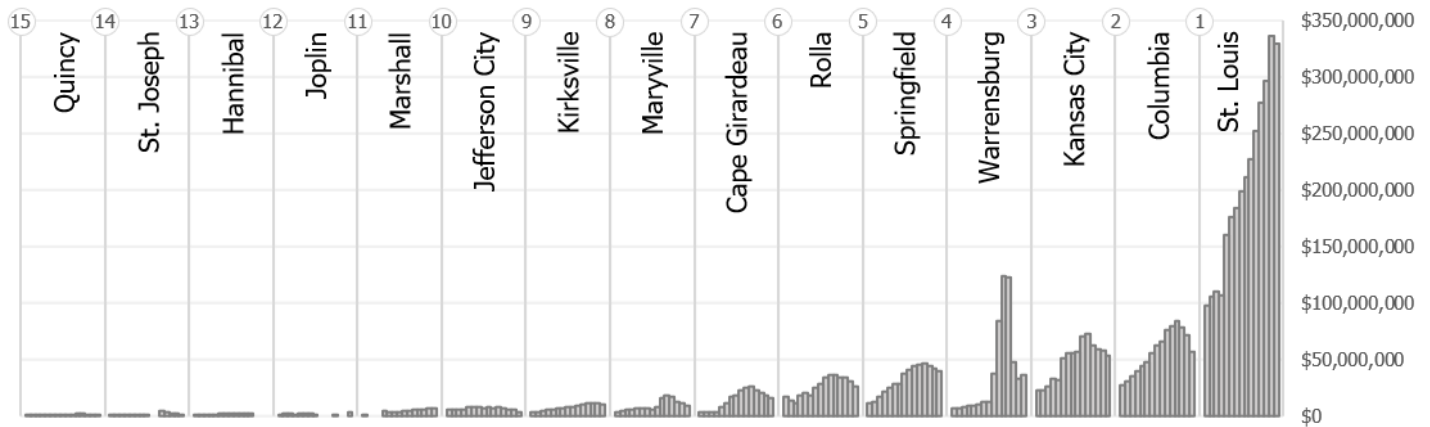
Figure 4 shows the economic contribution by international student enrollments to Missouri areas based on calculations of school tuition, room and board, and other living expenses. Again, the St. Louis metro area predominates, generating half the total amount. But other areas stand out relative to their size and overall economic output. For example, the Columbia metro area, home to the flagship University of Missouri campus, is able to generate economic benefits that are comparable to Kansas City, despite Columbia being an order of magnitude smaller. International student enrollments generate millions each year for smaller college towns, too. For example, according to the 2019 NAFSA data, Marshall (Missouri Valley College) and Maryville (Northwest Missouri State University) each benefited from international student spending totaling \$6.9 and \$9.3 million, respectively.<sup>12</sup>

The jobs data, according to NAFSA, seek to capture “the direct and indirect (i.e., multiplier) of jobs created and supported” from international student spending in the United States.<sup>13</sup> The data in Figure 5 highlight the strength of some areas, but also the relative precarity of others. For example, the number of jobs created or supported by international student enrollment in Cape Girardeau, home to Southeast Missouri State University, peaked in 2015

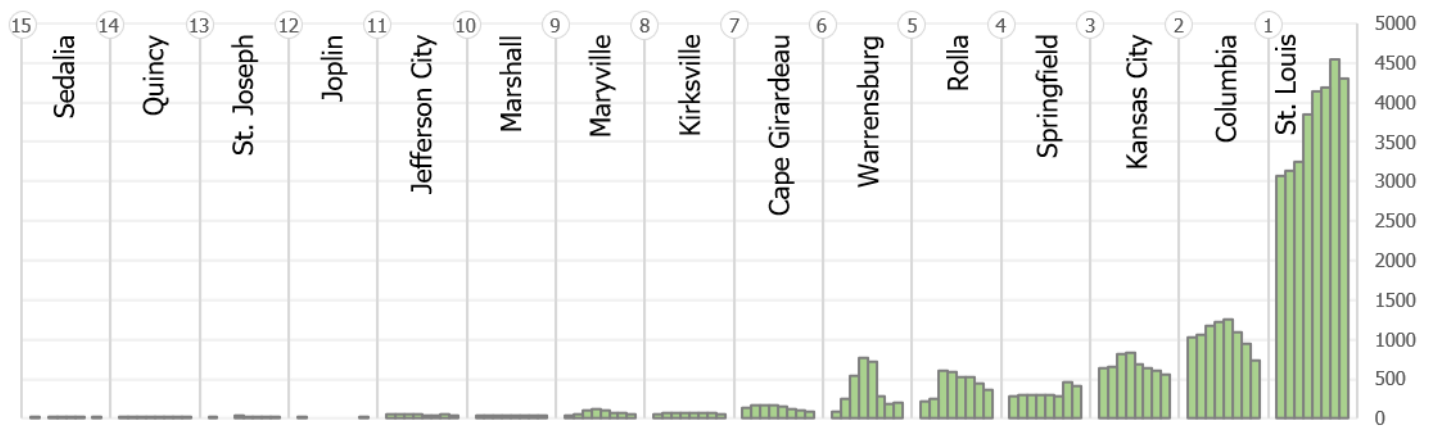
<sup>11</sup> The US Census Bureau defines metropolitan areas as having at least one urbanized cluster of 50,000 or more inhabitants, and a micropolitan area as having an urban cluster with a population of at least 10,000 but less than 50,000.

<sup>12</sup> See Appendix for individual school trends.

<sup>13</sup> Baumgartner, 1.



**Figure 4:** Shows the estimated yearly economic contribution from international student enrollment in Missouri across fifteen years (2005/06 - 2019/20), by metro/micro areas. Bar gaps equal data missing for that year. Data Source: NAFSA



**Figure 5:** Shows the estimated number of jobs supported yearly by international student enrollment in Missouri across eight years, by institution (2012/13 - 2019/20). Bar gaps equal data missing for that year. Data Source: NAFSA

with 176 jobs. But by 2019, that number of jobs supported had dropped by half, to eighty-eight jobs, according to the NAFSA data.

Larger metro economies like St. Louis are better able to absorb such fluctuations, but the effects on smaller cities and towns are likely to be felt more acutely. Although the NAFSA data are estimates, it is not hard to imagine the social and economic impacts that a loss (or gain) of eighty-eight jobs over five years could have on smaller communities.

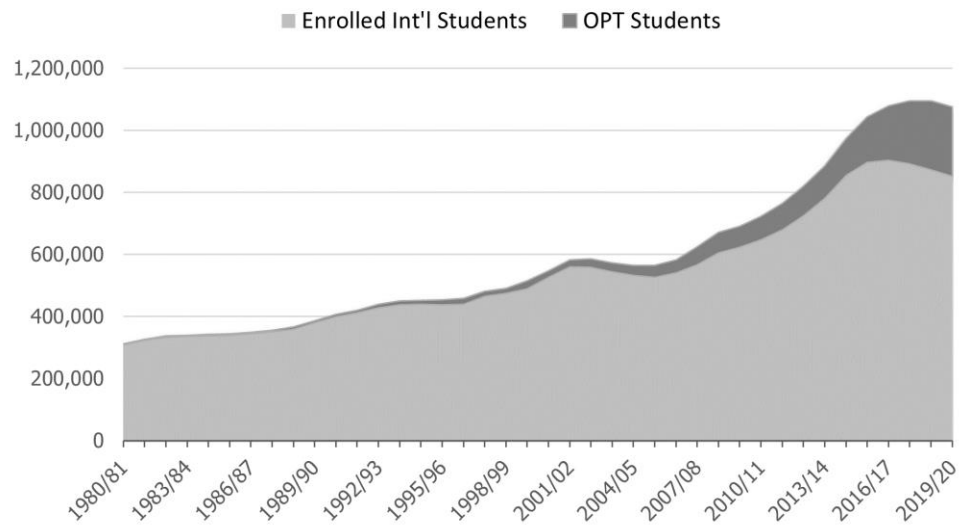
### Optional Practical Training

Most international students studying in the United States enter the country on an F-1 student visa. In accordance with F-1 visa regulations, international students are expected to enroll in classes full time and make regular progress toward completing their degree. Upon completion, they are eligible to apply for up to twelve months of post-graduation work authorization, known as Optional Practical Training (OPT). Furthermore, students with certain STEM-designated degrees are eligible to apply for an additional twenty-four months of work authorization on top of the twelve months of regular OPT. This is referred to as the OPT STEM Extension. The OPT program

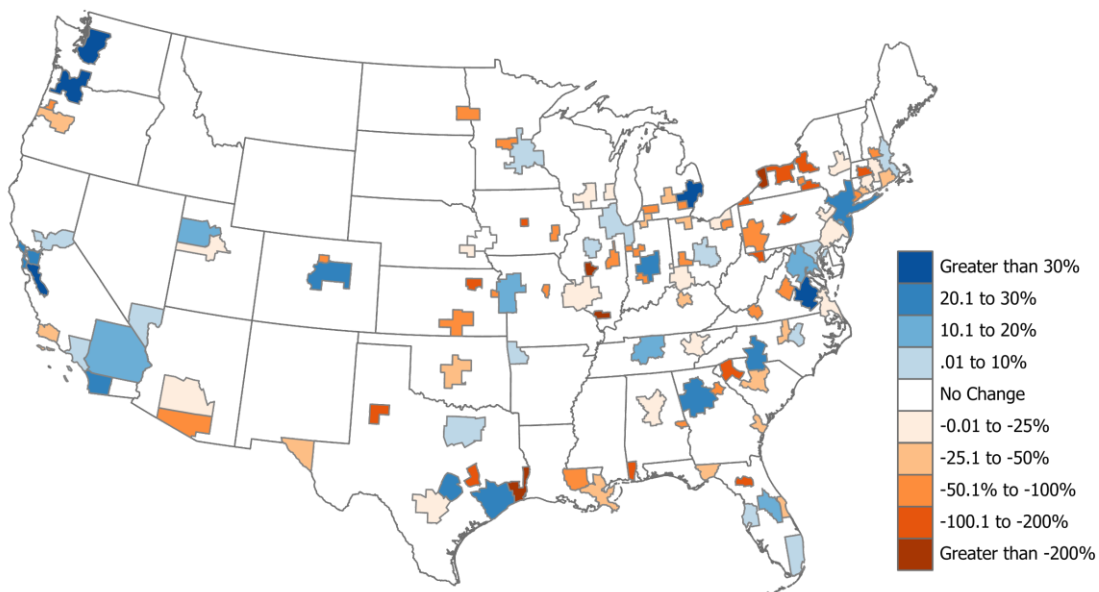
has grown in popularity in recent years.<sup>14</sup>

In 1999, 24,857 international students participated in OPT. By 2019, a record high 223,539 students were taking part in the program, an increase of 799 percent in only twenty years. Today, one in five international students in the United States is participating in OPT (Figure 6).

Research by Ruiz and Budiman has shown that OPT is concentrated largely in urban areas across the United States, with some metropolitan areas being more successful than most in overall OPT participation (Figure 7).<sup>15</sup> Not only did most of the US metros analyzed by the authors experience difficulty retaining most of their homegrown OPT graduates, they were also relatively unsuccessful in attracting many OPT graduates from other areas around the country.



**Figure 6:** Shows the total number of F-1 international students in the United States (1980/81 - 2019/20). Data Source: IIE



**Figure 7:** Shows the “percent net change,” or the net gain (blue) or the net loss (red), of OPT students within select US metro areas (2004-2016).<sup>1</sup> Based on data by Ruiz and Budiman (2018)

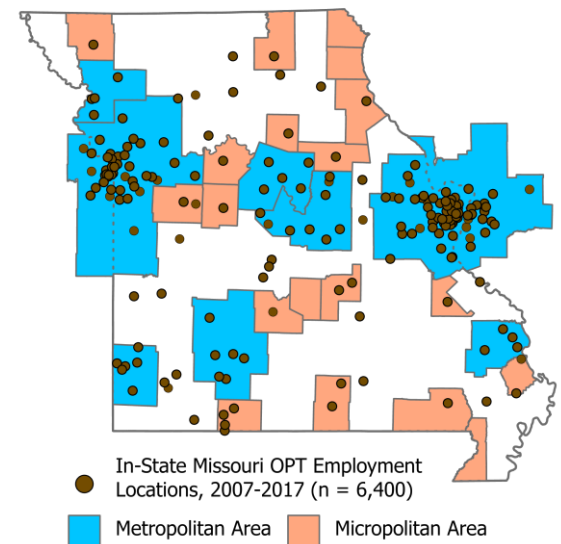
<sup>14</sup> Open Doors, *International Students: OPT Data* (2020), accessed May 1, 2021, <https://opendoorsdata.org/data/international-students/>.

<sup>15</sup> Neil Ruiz and Abby Budiman, *Number of Foreign College Students Staying and Working in US After Graduation Surges* (Washington, D.C.: Pew Research Center, 2018), accessed May 1, 2021, <https://www.pewresearch.org/global/2018/05/10/number-of-foreign-college-students-staying-and-working-in-u-s-after-graduation-surges>.

According to the authors' analysis of data between 2004-2016, the St. Louis metropolitan area produced 11,100 OPT student participants, compared to Kansas City's 6,100 and Columbia's 3,400. St. Louis was able to retain around 62 percent of its OPT students to stay and work in St. Louis, which was above the 113-metro average of 51 percent. Columbia retained 44 percent of its OPT students, while Kansas City retained only 38 percent. Interestingly, although 3,800 of Kansas City's 6,100 OPT students left, the city was able to attract 5,100 OPT students from elsewhere. Indeed, Kansas City was one of only thirty-five US metro areas that were "net importers." St. Louis and Columbia, on the other hand, were both "net exporters" at -5 percent and -85 percent respectively, meaning the number of new OPT students from elsewhere who entered the area to work was fewer than the number of local OPT students who left.

### In-State Missouri OPT

Every year, thousands of international students graduate from Missouri's colleges and universities and apply to the OPT program. But little is known about where these OPT students have found employment in and around Missouri, as well as outside its major metro areas.<sup>16</sup> Our analysis is different from previous OPT research in that we have focused solely on OPT from Missouri (which means any OPT data connected to international student graduates coming from out-of-state did not factor into our analysis). Through a Freedom of Information Act request from the Department of Homeland Security's Immigration and Customs Enforcement (ICE) agency, we obtained all OPT records pertaining to Missouri graduates between 2007-2017 (Figure 8).<sup>17</sup> With this data, we were able to get a detailed picture of Missouri's in-state OPT employment geographies.



**Figure 8:** Shows the in-state employment locations of Missouri international student graduates on OPT (2007-2017). Note: Points sharing the same employment address—here geocoded by city only—will appear as one individual point. For example, the point on Columbia, Missouri, signifies 572 OPT employment locations that had listed a Columbia address.  
Data Source: ICE

From the Missouri data, we geocoded over 24,000 employment locations around the country.<sup>18</sup> Less than a quarter of the total (6,400) were located in Missouri itself, including in its major metro areas.<sup>19</sup> The data show that Missouri's OPT numbers have trended upward since 2007, and as recently as 2017 Missouri graduates worked at over 1,200 employment locations across the state. But the proportion of Missouri OPT employment located in-state, as compared to out-of-state, has been steadily declining (Figure 9).

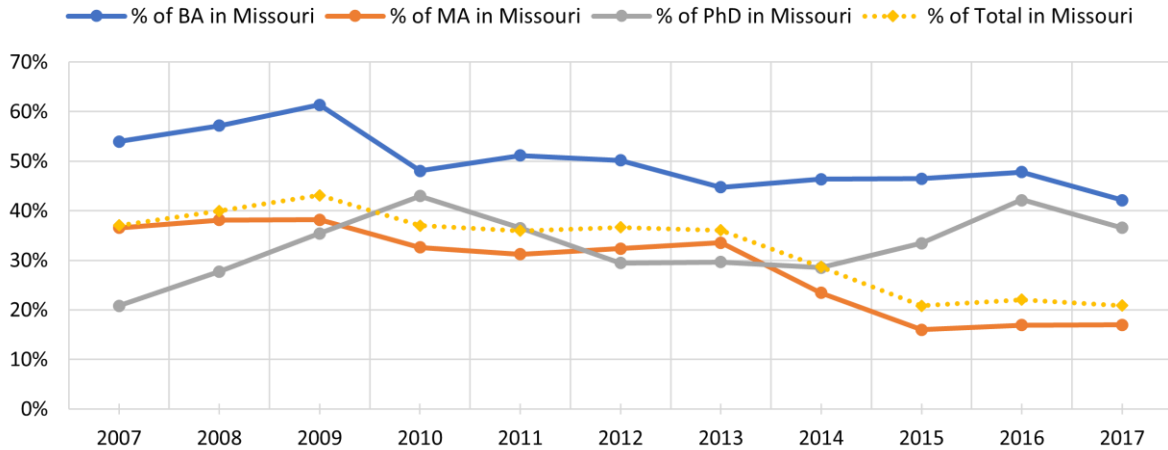
<sup>16</sup> James Kaemmerer and Matt Foulkes, "Where Do International Students Work After Graduation? Optional Practical Training and the New Geography of Jobs," *The Professional Geographer* 74, no. 3 (March 2022): 1-12, <https://doi.org/10.1080/00330124.2021.2014908>.

<sup>17</sup> US Immigration and Customs Enforcement (ICE), *Missouri OPT and CPT Data* (Washington, D.C.: Department of Homeland Security, 2018). Obtained via Freedom of Information Act Request, August 14, 2018.

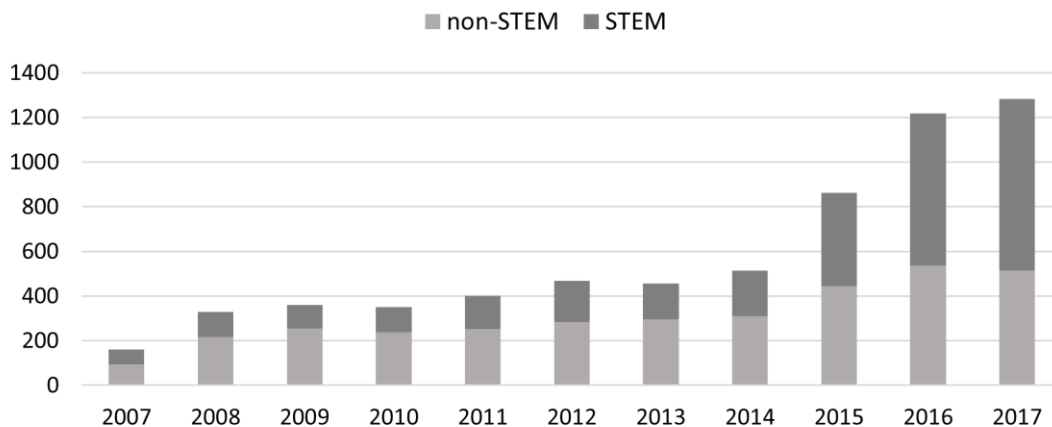
<sup>18</sup> Ibid. Note: although we will occasionally refer to the OPT data as *participants*, technically the data here represent employment *addresses*, of which some students may have multiple entries. Moreover, only data for twelve-month post-completion OPT was used.

<sup>19</sup> St. Louis and Kansas City metro areas extend beyond Missouri's borders, so while the employment addresses within these metro areas may be located outside Missouri, the nature of the metropolitan area unit assumes dense economic integration around the urban core, which for both Kansas City and St. Louis is in Missouri. For instance, while OPT students might work outside the state in these metro areas, they might also live, dine, or shop within Missouri.

In other words, as overall Missouri OPT numbers have risen, the percentage of those OPT employment locations found in Missouri itself has shrunk over time. In 2007, 37 percent of Missouri's OPT took place at locations within Missouri, but, by 2017, just over 20 percent did.<sup>20</sup> Of course, as Figure 9 shows, percentages vary by degree level. For example, although bachelor's degree holders were most likely to remain in-state to work, nearly



**Figure 9:** Shows the percentage of OPT employment locations of Missouri international student graduates within Missouri (including metro areas), by degree level (2007-2017). Data Source: ICE



**Figure 10:** Shows the number of OPT employment locations of Missouri international student graduates within Missouri (including metro areas), by degree designation (2007-2017). Data Source: ICE

60 percent still found employment elsewhere around the country. For many years, most of the in-state OPT employment involved non-STEM degrees; only recently has STEM degree employment eclipsed that of non-STEM. Of the 1,283 in-state employment locations in 2017, 40 percent were non-STEM and 60 percent were STEM (Figure 10).

Notably, NAFSA's economic value calculations do not factor in students working on OPT.<sup>21</sup> But participants in the OPT program can and do make significant economic contributions, as well. The economist Enrico Moretti

<sup>20</sup> US Immigration and Customs Enforcement (ICE).

<sup>21</sup> Baumgartner.

has written that “the number of college-educated workers is the key factor driving the economic success of cities.”<sup>22</sup> And according to Moretti, achieving the goal of educating more Americans who are better able to participate in the new geography of jobs can be expensive in time, effort, and money, and the benefits necessarily take years to materialize. More immediately, high-skilled immigration—in which international students play a part—would help infuse local labor markets with the needed skilled human capital to drive growth.<sup>23</sup> Therefore, we argue, lower international student enrollments in Missouri today risks a smaller pool of high-skilled international student graduates eligible to work on OPT in Missouri down the road.

## Promoting Work Experience

For schools without high rankings or global name recognition (which is to say, most schools), what other options are available to help recruit international students? And what can schools do to expand OPT participation and retain more graduates to work in-state? In this section, we will suggest that promoting and integrating work experience as part of the wider academic experience could be an effective way for Missouri schools to address their enrollment declines. At the same time, schools and their local communities would do well to leverage their geographic proximity to larger labor markets to encourage greater OPT participation and retention for the benefit of the wider economy.

It can be challenging to measure whether and to what degree schools are actively promoting practical training (i.e., work experience) to prospective students (i.e., potential enrollees). To get a better idea, we conducted a general content analysis of the websites and available digital literature on international student admissions at twenty-five of Missouri's higher education institutions with the largest international student enrollments.<sup>24</sup> We attempted to access the material as an interested international student would, albeit more systematically. We started with a Google search for each school, first accessing the main homepage, followed by the general student admissions page, and then to the sections exclusively for prospective international applicants. From there we searched for any forward-facing, engaging content meant to advertise the unique strengths and advantages offered by the school. Here we consider “forward-facing, engaging” as anything featured in international student-specific informational/promotional material or prominently featured on the international admissions website (as opposed to information found elsewhere on the website intended for students who are already enrolled). The purpose of this content analysis was to gauge how much practical training is included, highlighted, or mentioned in schools’ publicly available admissions/recruitment efforts.

This review did have its limitations. For example, schools might have proprietary materials given out by their recruiters or by contracted agents that are inaccessible to the general public. Nor did we watch any promotional multimedia such as YouTube videos, which could have also included information not mentioned on the website. However, we think our content analysis provides a reasonable overview of what prospective international students might see in their own college searches.

According to our review, only three of the twenty-five schools explicitly mentioned practical training—either

<sup>22</sup> Enrico Moretti, *The New Geography of Jobs* (Boston: Mariner Books/Houghton Mifflin Harcourt, 2012).

<sup>23</sup> In fact, NAFSA’s economic value calculations draw in part on work by Moretti (2012). See <https://www.nafsa.org/blog/economic-benefits-modernizing-us-immigration-system>.

<sup>24</sup> The content analysis was conducted in early summer 2021. Schools’ websites and other digital content could have been updated since then.

CPT<sup>25</sup> or OPT—in any of their publicly available admissions/recruitment materials (although two others made allusions by emphasizing STEM “qualifying” or “eligible” degree programs). One of the three schools made available digital informational brochures for prospective international students. One of the brochures featured a student’s testimonial about how they were “selected for an internship . . . while being on Curricular Practical Training (CPT) status, which led to me being hired as a full-time employee after graduation for the duration of my Optional Practical Training (OPT).” There was other text directed at prospective students that promoted “[adding] experiences to your resume before you even graduate. Making you more marketable in a competitive workforce.” The same brochure also included a graphic highlighting “60 STEM-designated programs with 3-year OPT eligibility.” On another page, it gave a list of degrees, graduate and undergraduate, with a “STEM” label indicating “STEM-designated programs [that] are eligible for 2-year OPT extension.”<sup>26</sup>

Another school had produced downloadable brochures for prospective international students for specific STEM-eligible masters programs. The master’s in applied computer science brochure included graphics that touted “100% job placement” for students in the same degree program from a previous year. There was also a section titled “OPT Placement” that listed examples of previous graduates’ computer science-related job positions, followed by the median salary of applied computer science workers, as well as an explicit mention that the degree is STEM-eligible and “allows an extra 24 months of OPT.”<sup>27</sup> Interestingly, there was another brochure promoting a master’s degree in English, but it included nothing about post-graduation employment opportunities even though international students graduating with a masters in English would be eligible for twelve months of OPT.

But these examples were the exceptions. Given the popularity of the OPT program nationally, as well as past OPT participation by thousands of Missouri graduates, we expected to see practical training featured in some way in more schools’ materials. Instead, much of the focus covered customary new-student topics, such as student demographics, degree offerings, campus amenities, community life, student safety, tuition costs, and financial aid. Geography was presented almost touristically to position the school in proximity to other major US cities worth visiting.

It could be that schools have refrained from promoting practical training prominently in their admissions and recruitment materials because, at the undergraduate level at least, few incoming freshmen—international or otherwise—place a high priority on gaining work experience so early in their academic careers. Many might not even be aware that the programs exist. Nevertheless, we see an opportunity to raise awareness of practical training across all degree levels and disciplines.<sup>28</sup>

## Discussion

In a paper discussing the merits of greater international student enrollment, it is worth briefly addressing whether

<sup>25</sup> CPT, or Curricular Practical Training, is work authorization similar to OPT but done during a student’s academic program as part of the program’s established curriculum (e.g., a summer internship).

<sup>26</sup> Southeast Missouri State University, accessed May 1, 2021, <https://semo.edu/international/pdf/international-brochure.pdf>.

<sup>27</sup> Northwest Missouri State University, *Master of Science in Applied Computer Science*, accessed May 1, 2021, <https://www.nwmissouri.edu/admissions/PDF/intl/grad-msacs.pdf>.

<sup>28</sup> Prior to academia, this paper’s first author was himself a university international student adviser. And through conversations with advisers at schools around Missouri and across the country, it became evident that many schools do not perform much, if any, in-house post-graduation OPT data collection.

an increase in international students would take classroom seats away from domestic students, as some counter-arguments might claim. For instance, a recent survey found that a plurality of respondents (43 percent) believed that “Students from other countries take places in US colleges and universities that would have gone to students from the US.”<sup>29</sup> Research, however, suggests differently. A number of analyses have found international students not only do not displace domestic students at the average US university,<sup>30</sup> but their numbers are also associated with an increase in domestic enrollments generally<sup>31</sup> as well as an increase in STEM degrees for domestic students at the bachelor’s level.<sup>32</sup>

Moreover, international student enrollment has come to be seen by schools as a vital replacement to the lost revenue that might have otherwise come from domestic enrollments.<sup>33</sup> After all, most international students pay full out-of-state tuition rates. A decline in both international and domestic enrollments means that without other revenue sources, schools face tough budgetary decisions regarding services, operations, or even instruction—the kinds of decisions schools were suddenly forced to make at the onset of the pandemic. One proposed solution has been the pivot to greater online instruction. However, much of the economic benefit from international students studying in the United States comes from being on campus, in person, and spending money in the community, such as paying for housing and utilities, food and dining, phone and internet, transportation-related costs, health insurance, and other discretionary spending.<sup>34</sup> Online instruction is unlikely to make up for the lost revenue because it neglects the comparative advantage of in-person instruction, i.e., experiencing American culture firsthand. Instead, we see the solution as decidedly place-based.

As schools are set to compete ever fiercer for prospective international students’ attention and consideration post-pandemic, they will have to rethink how they can distinguish themselves among the growing number of domestic and international options that all increasingly offer a similar quality product. From our perspective, schools in Missouri would do well to build out their practical training opportunities, promote their geographic proximity and access to markets, and more formally establish practical training as an extension of students’ academic plans.

Greater in-state participation in Curricular Practical Training (CPT), especially at the local level, gives more students and more employers the chance to make valuable connections before deciding on the possibility of later post-graduation OPT employment. Schools should also consider expanding their OPT focus beyond just graduate-level STEM degrees and the prospect of twenty-four additional months of OPT. International students across all subject areas would benefit from an awareness of practical training, and they should be encouraged to seek out work experience regardless of whether they are graduating with a degree in Computer Science or English Literature. Making students aware of such opportunities during the recruitment and admissions stages not only offers

<sup>29</sup> Interestingly, the survey asked the same question in 2017, but at that time a plurality of respondents (42 percent) said they did *not* believe international students took seats away from domestic students. See Robin Matross Helms and Sarah Spreitzer, *International Student Inclusion and Success: Public Attitudes, Policy Imperatives, and Practical Strategies* (Washington, D.C.: American Council on Education, 2021), <https://www.acenet.edu/Documents/International-Student-Inclusion-Success.pdf>.

<sup>30</sup> Karin Fischer, “Foreign Students Aren’t Edging Out Locals, Numbers Show,” *Chronicle of Higher Education*, February 2, 2015, accessed July 16, 2021, <https://www.chronicle.com/article/foreign-students-arent-edging-out-locals-numbers-show/>.

<sup>31</sup> Kevin Shih, “Do International Students Crowd-Out or Cross-Subsidize Americans in Higher Education?” *Journal of Public Economics* 156 (2017): 170-184, accessed July 16, 2021, <https://doi.org/10.1016/j.jpubeco.2017.10.003>.

<sup>32</sup> Madeline Zavodny, *The Impact on U.S. Men and Women in STEM Fields of Increases in International Students* (National Foundation for American Policy, April 2021), accessed July 16, 2021, <https://nfap.com/wp-content/uploads/2021/04/International-Students-and-STEM.NFAP-Policy-Brief-April-2021.pdf>.

<sup>33</sup> Shih.

<sup>34</sup> Baumgartner.

schools an additional selling point and adds value to their educational product, it also gives students greater agency to make more informed decisions to get the most out of their academic experience.

Many Missouri schools have much of the critical infrastructure in place. For example, they already house international student offices with established and professionalized international student admissions and advising staff. But this proposal necessarily extends beyond the academic institutions themselves. Success in attracting and retaining international students benefits not only students and schools but the whole state. A number of organizations already exist to assess and leverage the topics talked about here. Study Missouri is a consortium of Missouri colleges and universities working to advance international education throughout the state.<sup>35</sup> Together, these institutions are well-positioned to respond to new international education initiatives and leverage them at scale among its members, especially its smaller more tuition-dependent schools.

More work can be done to raise awareness, answer questions, and address misconceptions about international student enrollment and employment among Missourians of all political viewpoints. Furthermore, public-private partnerships, such as the St. Louis Mosaic Project's Global Talent Hiring Program, have the potential to bring together interested stakeholders including business leaders, government officials, university administrators, civic groups, and the general public to support, facilitate, and advocate for international student issues within local communities.<sup>36</sup> Partnerships like these can help reduce barriers to entry in the OPT program for both student participants and would-be employers.

Political leaders and the business communities in Missouri's major metropolitan areas can help attract top talent to their labor markets by becoming more aware of and engaged with existing OPT programs at universities in their labor markets. Economic growth depends on innovation-based industries, and retaining highly educated, talented workers helps existing companies compete in the global marketplace. A confluence of innovation-oriented companies and high-skilled workers can also create what economists call an agglomeration economy that attracts other innovation-based companies and high-skilled workers to the region.

Missouri has struggled to attract high-skilled workers, and retaining talented international students via OPT seems like a logical, practical strategy to help Missouri's metropolitan regions, and especially St. Louis and Kansas City, emerge from their industrial past.

Businesses located in smaller metropolitan areas, micropolitan regions, and rural regions could also leverage the benefits of OPT to create regionally clustered specialty economies. Because OPT participants are interested in gaining job experience,<sup>37</sup> these young workers may be more willing to temporarily move to more rural or historically underserved areas than native-born migrants. Communities and businesses could attract OPT-eligible students by working with regional universities to match compelling employment experiences with OPT participants.

<sup>35</sup> Study Missouri, accessed May 1, 2021, <https://studymissouri.org/>.

<sup>36</sup> Jennifer Morton and Ekin K. Pellegrini, *Global Talent Hiring in St. Louis: Current Challenges and Recommendations to the Region for Retaining International Students Post-Graduation* (St. Louis: University of Missouri-St. Louis and St. Louis Mosaic Project, 2015), accessed May 1, 2021, [https://www.researchgate.net/publication/282648608\\_Global\\_talent\\_hiring\\_in\\_St\\_Louis\\_Current\\_challenges\\_and\\_recommendations\\_to\\_the\\_region\\_for\\_retaining\\_international\\_students\\_post-graduation](https://www.researchgate.net/publication/282648608_Global_talent_hiring_in_St_Louis_Current_challenges_and_recommendations_to_the_region_for_retaining_international_students_post-graduation).

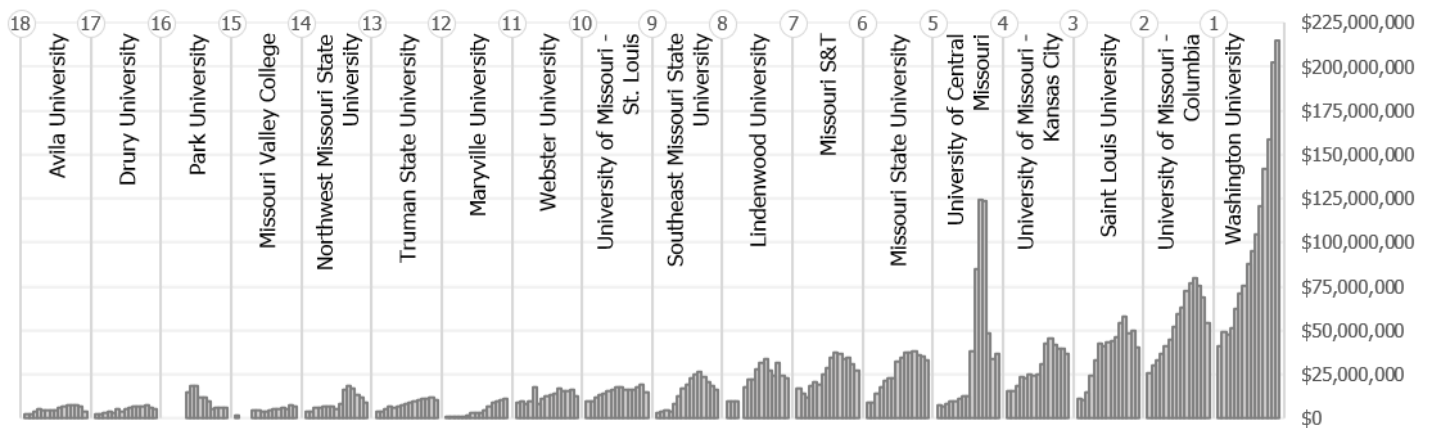
<sup>37</sup> Peggy Gesing and Chris Glass, "STEM Student Mobility Intentions Post-Graduation and the Role of Reverse Push-Pull Factors," *International Journal of Educational Development* 65 (March 2019): 227–36, accessed July 16, 2021, <https://doi.org/10.1016/j.ijedudev.2018.08.008>.

If successful, a sizable OPT cohort could attract more innovation-based and technology-based businesses, boosting regional economic productivity.

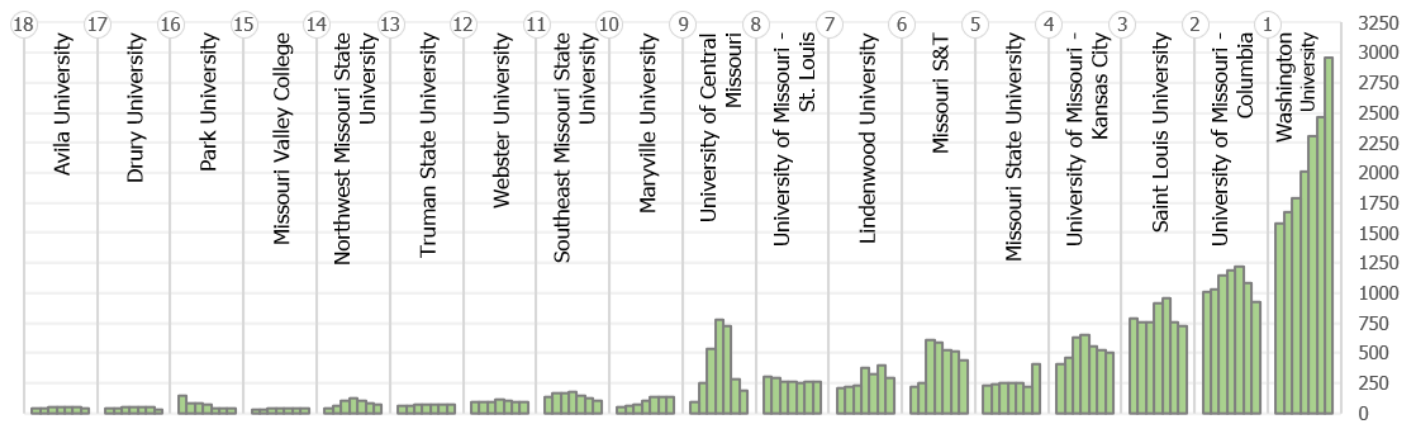
## Conclusion

Despite Missouri's demographic and economic challenges, the state has a history of success in attracting international students. The state can maintain that success by connecting these students to regional labor markets via the opportunities afforded by OPT. This can be achieved through coordinated efforts between universities, the business community, political leaders, and the state. Leveraging the skills and motivation of Missouri's international students as part of a larger growth strategy makes sense. Students, schools, their communities, and Missouri at large all stand to benefit.

## APPENDIX 1.1



**Figure 11:** Shows the estimated yearly economic contribution from international student enrollment in Missouri across fifteen years (2005/06 - 2019/20), by institution. Bar gaps equal data missing for that year. Data Source: NAFSA



**Figure 12:** Shows the estimated number of jobs supported yearly by international student enrollment in Missouri across eight years, by institution (2012/13 - 2019/20). Data Source: NAFSA