

Associate in Applied Science (AAS) Transfer in NC: Patterns, Predictors, and Student Experiences

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Transfer Project Background

Since 2021, the Transfer Research Team at UNC Charlotte has sought to examine community college (CC) transfer student experiences in North Carolina (NC) using a multi-method approach including large-scale qualitative interview data; statewide quantitative data from the Community College Survey of Student Engagement (CCSSE); enrollment, completion, and transfer data from three partner community colleges; and publicly available data on NC transfer students. Through a series of briefs, we have shared findings on student navigation through the complex transfer ecosystem, experiences during the college transition process, and predictors of successful university transfer on a more macro scale. See our prior reports: <https://sites.google.com/uncc.edu/uncctransferresearchproject/home>.

While the experiences and outcomes of our current participants paint an important picture about transfer in NC and yield recommendations for policy and practice, we know that not all subgroups of students experience transfer in the same way. The current phase of our project is to tell the stories of students within important vertical transfer student subgroups to explore the nuanced experiences of specific populations seeking to transition to a university. This report describes the vertical transfer journeys of students who pursue and transfer with Associate in Applied Science (AAS) degrees, those not typically intended for transfer.

Executive Summary

With 19% of North Carolina Community College System (NCCCS)-to-UNC System transfer students holding an Associate in Applied Science (AAS) degree prior to transfer, the AAS pathway is an important part of North Carolina's (NC's) transfer landscape. AAS degrees are not the typical route for transfer, are not included in the state's Comprehensive Articulation Agreement (CAA), and are generally associated with lower baccalaureate completion rates and greater loss of credits upon transfer.

The present study brings together multiple sources of data to identify AAS enrollment patterns, predictors of successful community college-to-university (vertical) transfer, and student experiences to better explain AAS transfer in NC and make recommendations for improving conditions for students. The following are key findings and recommendations.

Primary Findings

- **AAS vertical transfer occurs in a statewide ecosystem.** In Fall 2024, students with AAS degrees transferred along 434 distinct transfer enrollment patterns from NC CCs to UNC System campuses (not accounting for AAS transfer to private institutions). Only 39% followed the “primary AAS feeder pattern” from their CC to what is the top university destination for AAS students from that college.
- **Associate degree earning and programs matter for transfer.** Transfer-intending students earning an AAS had 2.2 times higher odds of successful transfer than those without an associate degree. Odds were even higher for those earning a transfer degree (e.g., Associate in Arts/Science). Also, pursuing an AAS in Business/IT and Health Sciences had a greater association with transfer than Engineering, Industrial, and Transportation Technologies.
- **Information seeking is a challenge, and a personal touch can make a difference.** With AAS transfer pathways largely done on an institution-to-institution (bilateral) basis, many students acknowledged challenges in identifying transfer requirements across universities and with credit loss. While advising was not a predictor of transfer, and there is a high tendency toward student self-navigation, many acknowledged the value of helpful advising from the CC and university settings.
- **Career aspirations are intertwined with transfer choices.** AAS students were highly driven by careers with CC instructors as a key source of guidance. Some interviewed were highly focused on advanced education and degrees to be gained in a university, while some focused on launching a career and taking a pause on higher education aspirations.

Recommendations

1. Enhance transparency by including all bilateral AAS agreements among the Transfer Guides on the CFNC website.
2. Expand existing bilateral agreements across all CCs offering similar programs.
3. Provide opportunities for pre-transfer CC students in AAS programs to complete ACA 122: College Transfer Success.
4. Identify all university programs through which AAS earners can complete a bachelor's degree in no more than 60 credit hours.

Overview

Themes in the AAS Literature

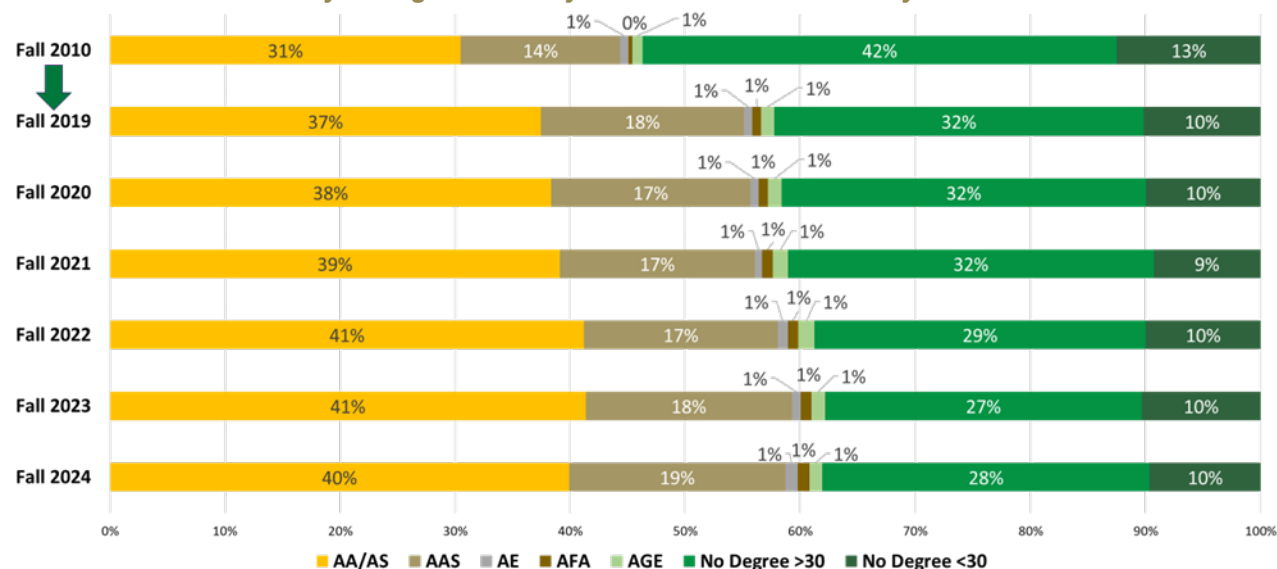
Existing research on AAS transfer shows that processes and outcomes are highly variable, thus AAS vertical transfer is not normalized. A key finding over time is that transfer with an AAS has been inefficient in terms of credit lossⁱ and credit applicabilityⁱⁱ when transferring. A recent report from the Belk Center noted that NC CC students with an AAS lose, on average, approximately 28 credit hours upon transfer.ⁱⁱⁱ In addition to credit transfer inefficiency, the literature has consistently shown lower baccalaureate degree outcomes for AAS students as compared to transfer with more traditional associate degrees.^{iv} While causation cannot be shown for the baccalaureate degree outcomes, the literature has been consistent in reporting limitations to credit transfer and the availability of AAS transfer agreements.^v

Still, students across many states, including NC, transfer with AAS degrees. While many acknowledge their experiences may be different from those with more traditional transfer degrees,^{vi} AAS students have been found to experience enhanced baccalaureate aspirations when transfer pathways are available.^{vii}

AAS Transfer Context in NC

AAS degrees are a critical, yet complicated, component of NC's vertical transfer landscape. Two essential areas in the discussion of AAS transfer are the prevalence and the existing policy. Among students transferring from the NCCCS to the UNC System in Fall 2024, 19% made the transition with an AAS, which is the highest percentage among the years we have been tracking (See Figure 1).

Figure 1
Percent of NC Community College to UNC System Transfer Students by Pre-Transfer Credential



Data Source: Publicly available data through the UNC System Transfer Data Dashboards.

Although AAS students represent 19% of transfer between public systems, the statewide Comprehensive Articulation Agreement (CAA) between the NCCCS and UNC System does not facilitate AAS transfer pathways. The Independent Comprehensive Articulation Agreement (ICAA) between CCs and private colleges in NC is similar.

Instead of statewide policy, hundreds of bilateral agreements between specific institutions are in place across the state. However, a list of agreements is not presently published; thus, students must go to websites of individual institutions to obtain information about specific transfer paths. The exceptions are statewide Uniform Articulation Agreements (UAAs) for the AAS in Early Childhood Education and the AAS in Nursing (RN to BSN).

Through great work of the TAC, the UNC System Office, and institutional leaders, the Baccalaureate Degree Plans (BDPs) that provide transfer pathways specific to each university and major have been updated into common Transfer Guide formats and are now placed in one repository marking a significant step toward transparency for prospective community college transfer students.¹ While BDPs/Transfer Guides are mandated by the CAA for traditional transfer pathways (i.e., Associate in Arts/Associate in Science), they are not required in existing AAS agreements. Thus, the repository does not yet include AAS Transfer Guides.

Current Study and Participants

The purpose of the present study was threefold: (1) identify the transfer patterns of AAS graduates transferring to UNC System campuses, (2) identify predictors of successful vertical transfer among AAS students, and (3) describe the experiences of AAS transfer students as they navigate toward baccalaureate-granting institutions.

The study presented in this report combines data from three sources:

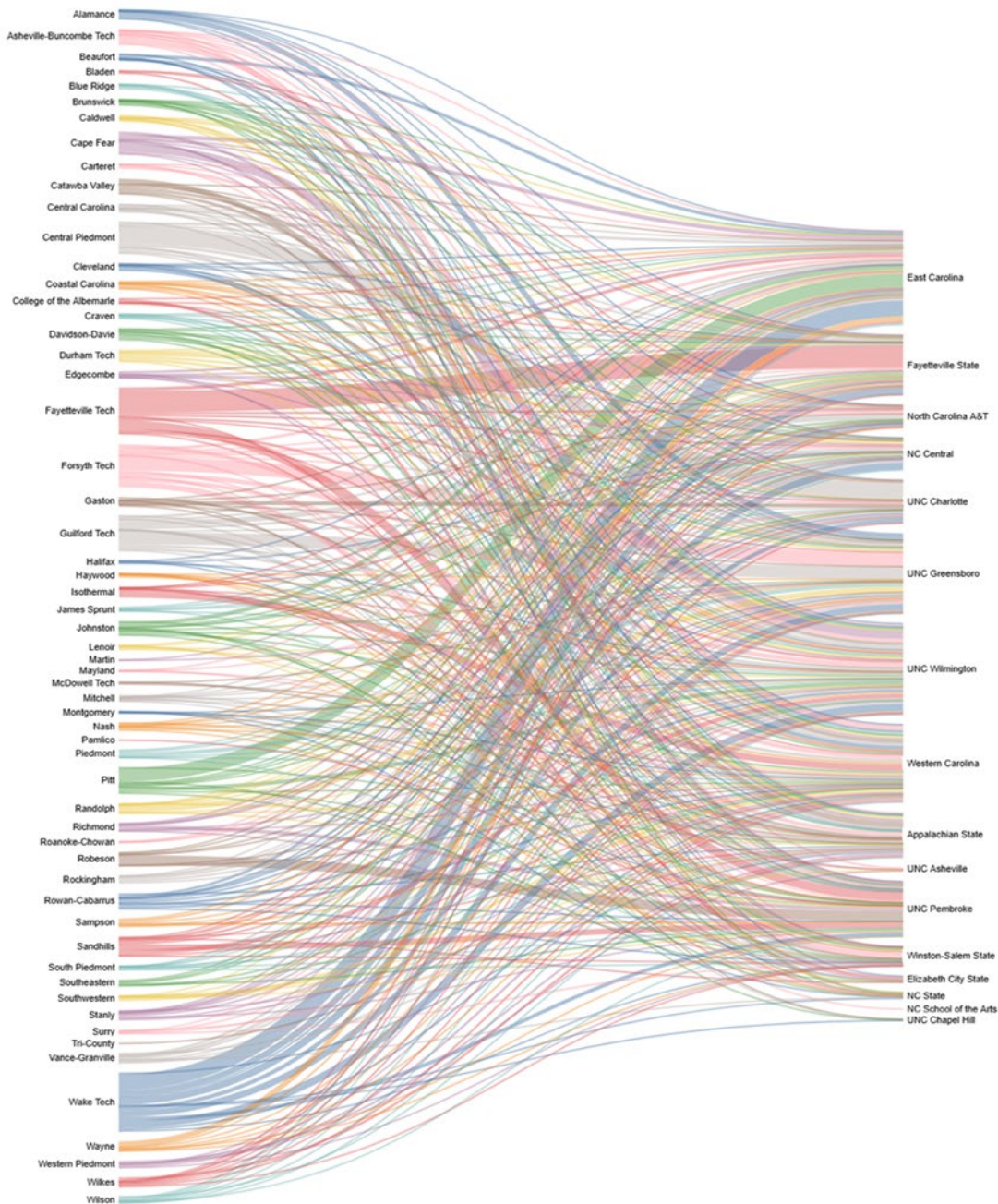
1. UNC System Transfer Dashboard data are used to identify the transfer patterns of AAS completers.
2. The quantitative analysis utilized institutional data merged with CCSSE data, focusing on a subsample of 635 transfer-seeking AAS students enrolled across three NC community colleges.
3. The qualitative data on transfer student experiences are drawn from a state-wide longitudinal research study designed to understand NC transfer students' pre- and post-transfer experiences. This report features a subsample of 41 students who were pursuing AAS degrees prior to transfer or had completed an AAS degree at the CC. These data are supplemented with CCSSE data from 24 NC CCs collected from 2017 to 2019.

AAS Transfer Enrollment Patterns

Considering prior research that shows that AAS students experience inefficient transfer and NC's reliance on mostly institution-to-institution (i.e., bilateral) transfer agreements that often represent local partnerships, it is essential to explore transfer enrollment data to determine whether AAS transfer is predominantly a local or statewide proposition. Figure 2 visually represents 434 distinct vertical transfer enrollment patterns between NCCCs and UNC System Campuses in Fall 2024 alone, not even accounting for private college/university transfer in NC.

¹ <https://www.cfnc.org/plan-your-future/plan-for-college/transfer-student-planner/to-unc-system-institutions/transfer-guides/>

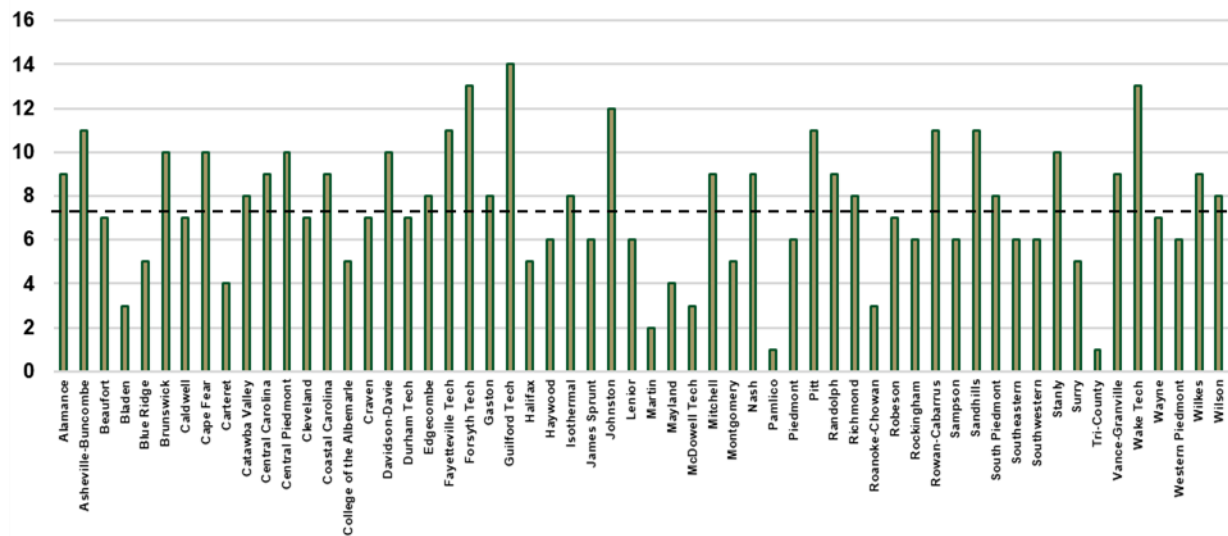
Figure 2
NC Community College System to UNC System Vertical Transfer Destinations for AAS Students



To explore AAS transfer enrollment patterns further, Figure 3 shows the number UNC System campuses receiving AAS graduates from each of the 58 community colleges. The average is approximately 7 destination universities per community college, with 14 community colleges sending AAS graduates to 10 or more UNC campuses. Ultimately, the data show that only 39% of AAS transfer students make the transition through the primary AAS feeder pattern (i.e., the most populous university pathway).

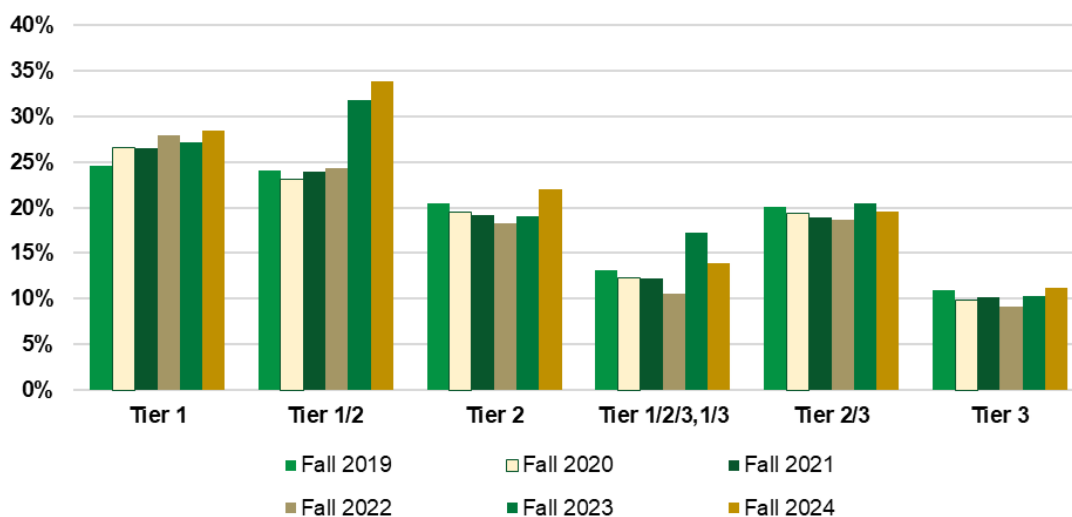
Considering the 434 patterns, the average of 7 destination universities across the 58 community colleges, and fewer than 39% of transfers following the primary feeder pattern, **we characterize NC to have a statewide AAS transfer ecosystem.**

Figure 3
Number of AAS Transfer Destinations by CC (NCCCS to UNC System – Fall 2024)



Additionally, AAS transfer has geographic implications with higher percentages of students from more economically distressed counties transferring with AAS degrees. Typically, among transfer students at CCs in service areas that are exclusively Tier 1 (most economically distressed) or a combination of Tier 1 and Tier 2, more than 25% of vertical transfer occurs with an AAS degree. By comparison, community college students at colleges in the least distressed service areas (Tier 3) have only about 10% of students transferring with an AAS. Efficient AAS pathways are particularly critical for students from more economically distressed, often rural, areas.

Figure 4
Percent of CC AAS Transfers by Economic Distress* of CC Service Area**



*Economic distress shown by 2020 Tier designation reported by NC Dept of Commerce (Tier 1=most distress)

**Multi-tier service areas include counties with more than one level of economic distress.

Predictors of AAS Student Transfer

While this sample included students in AAS degree programs who indicated an intent to transfer on the CCSSE, 10% of the sample earned transfer-oriented degrees in addition to, or instead of, the AAS. Nearly half (48%) of the sample did not earn an associate degree at all. Forty-two percent of the sample earned at least one AAS. Students may or may not have earned sub-associate credentials along the way. Descriptively, our examination points to the varied ways that AAS students pursue academic credentials.

We leveraged CCSSE data to create composite variables for frequency of transfer advising and socioacademic integration, which combines six items focusing on CC engagement in the CCSSE.

Using vertical transfer (yes/no) as the primary outcome, we applied a binomial logistic regression to examine the odds of vertical transfer as a function of key variables: (1) member of historically underrepresented minority; (2) gender; (3) developmental course enrollment; (4) completed 24 credits within first 30 attempted; (5) socioacademic integration; (6) frequency of transfer advising; (7) associate degree completion²; and (8) cluster of AAS program enrollment³.

Table 1

Predictors of Transfer among Transfer-Intending AAS Students (n = 635)

Predictor	Effect on Odds of Vertical Transfer (+) = positive predictor; (-) = negative predictor; blank = no effect
Age (18-24) ^a	
Women ^b	
Underrepresented minority ^c	
Took at least one developmental course	
Completed 24 or more credits in first 30 enrolled	
Socioacademic integration (scale of 1-24)	
Frequency of transfer advising (scale of 0-9)	
Credential ^d	
AAS earned	(+)
Transfer degree earned (e.g., AA/AS)	(+)
Enrollment in Program Cluster ^e	
Business/IT	(+)
Health Sciences	(+)
Public Services	

^a Compared with those 25+; ^b Compared with men; ^c Compared with White and Asian; ^d Compared with no associate degree earned; ^e Compared with Engineering, Industrial, and Transportation cluster

Results (Table 1) suggest that students who earned an AAS degree had 2.2 times higher odds ($p < .001$) of successful transfer compared to those who did not earn an associate degree. Meanwhile, students who earned a transfer-oriented associate degree (such as an AA or AS) had 3.2 times higher odds ($p < .001$) of transfer compared to students who did not complete an associate degree.

Focusing on program clusters, AAS students who were enrolled in Health Science programs had 3.6 times higher odds ($p < .001$) of transfer compared to AAS students enrolled in Engineering, Industrial, and Transportation programs. In addition, AAS students who were enrolled in Business/IT programs had 2.4 times higher odds ($p < .05$) of transfer compared to AAS students who were enrolled in Engineering, Industrial, and Transportation programs.

While transfer-oriented degrees understandably may offer a stronger pathway to vertical transfer than applied degrees like the AAS, presumably due to being normalized in state transfer policy, earning an AAS is still highly associated with baccalaureate degree enrollment.

² Three-level categorical variable for program enrollment: (1) No associate degree earned (reference category—omitted from regression model), (2) AAS earned (possibly in addition to sub-associate credential, but no transfer degree) and (3) Transfer degree earned (e.g., AA, AS), which may include some AAS earners.

³ Four-level categorical variable for enrolled program: (1) Engineering, Industrial, and Transportation (reference category—omitted from regression model), (2) Public Service, (3) Health Science, and (4) Business.

None of the other variables, such as race/ethnicity, gender, academic integration, or advising, showed a statistically significant relationship with vertical transfer. While these may be important to explore, degree completion and program may be the clearest differentiators in the context of these data.

AAS Transfer Student Experiences

Students and Advisors Navigate Transfer Complexity and Confusion

In prior reports,^{viii} we have shared experiences of students who navigate system complexity in *ad-hoc*, *independent*, and *inconsistent* ways. Although navigating complexity was a shared theme across all transfer pathways, it was more pronounced for students in AAS programs as they encountered information-gathering and advising challenges different from their peers in more traditional transfer programs. These challenges were described as a “disconnect” between AAS degree requirements and those required by post-transfer institutions. Luna earned an AAS in paralegal studies and lost two-thirds of her credits when transferring. She described navigating differences between degree programs:

At first, I didn't know the difference between applied science and A.A...I really relied heavily on my advisor. She was wonderful. She gave me a lot of different options.

The quantitative findings from a subsample of students did not show advising to be a significant predictor of transfer; however, broader survey findings may help explain this result. While in some cases advisors attempted to mitigate the disconnect like in Luna's experience, only 24% of transfer-intending AAS students sought transfer advising, showing a mostly self-guided process (Figure 5).

Student narratives described a range of tools, strategies, and support systems that they leveraged to prepare for and ultimately transfer. Dana, a pre-transfer student pursuing an AAS in business, indicated:

[The advisor] gave me the document in regards to what courses would be transferrable, I think last semester I took one course that wasn't transferrable...between my advisor, Google, and going on to [university's] website and just basically googling what a 2+2 agreement was.

Clay, who has transferred successfully and is currently pursuing a B.S. in business discussed the importance of university-based pre-transfer advising, even if the process has not been entirely seamless:

I started applying for [public university] and my advisor there, he also was very helpful with getting all the stuff approved for getting my credits and everything there. He's talked to me quite a bit... Because there was some general education stuff that I needed to do that wasn't covered by my two-year degree [AAS], so I needed to plan on that. That's the reason why, right now, I'm still attending [community college] to try to get those general education credits done.

Although students described advisors at the CCs and universities as “helpful” and “supportive,” both students and advisors navigated systemic challenges stemming from the absence of clear and uniform pathways through AAS programs, which could lead to issues of credit mobility and credit loss.

Career is a Driver for AAS Transfer Students

Students in AAS programs were driven to complete a bachelor's degree for career advancement. For these students, career planning was central to their transfer decisions, shaping where they applied, which degrees they pursued, and their transfer timelines. Most AAS students in the qualitative study (70%) and nearly half (48%) of the CCSSE respondents were employed, further illustrating the role of work-driven demands on their transfer journeys. Despite a strong workforce orientation, only 30 percent of pre-transfer students reported visiting a career counselor (Figure 6). Instead, students sought career guidance from course instructors and work colleagues.

Figure 5

Transfer Advising & Outcomes

AAS transfer-intending students self-navigate transfer paths not always designed to accommodate their educational reroute.

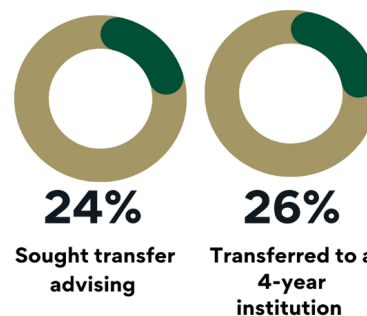
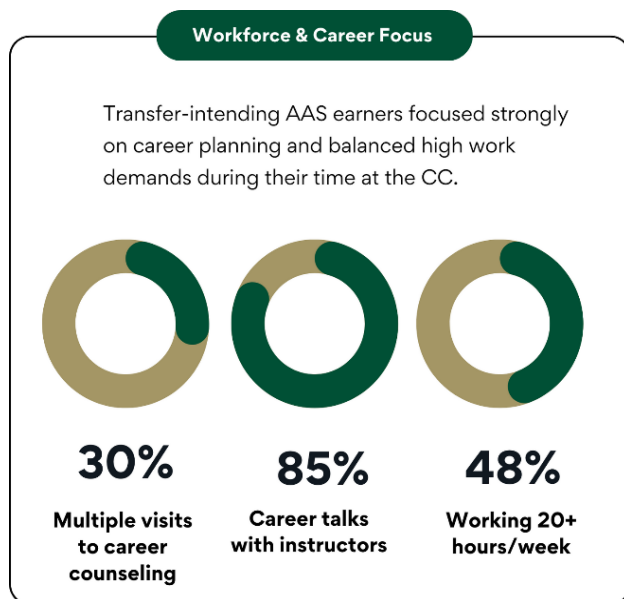


Figure 6



Carlos spent years in the workforce after earning an AAS in Computer-Aided Drafting and a transfer associate degree. He has now been mentored to pursue a bachelor's in engineering:

From working, I have the general idea of how engineers think by working under them, by supporting them, by being in the same room and being exposed to same information as they are, you see the process.

While Carlos' work experience led to enhanced baccalaureate aspirations, Preston had a different experience. Though he intended to earn an AAS, he left college without any degree to advance his career after earning two certificates in therapeutic massage and passing the state board exam:

I think it would be difficult for me to transfer but also keep up the enthusiasm I have for work ... a lot of people expected me to shoot higher, but for me I'm really happy with where I am.

Preston someday hopes to return to college to pursue a bachelor's but didn't see the immediate need for his career advancement. Another student, Hudson, despite losing many credits that slowed his baccalaureate path and used up semesters of Pell eligibility, is persisting on his post-transfer journey. He continues to be driven by his career goals despite transfer challenges:

College could be parallel to my career ...now I'm in graphic design, I am still a game developer ...whenever I go into a class, or I go into a particular thing of it, is how can it affect what I'm doing? What skills can I apply that I'm learning into game design?

Hudson continues to work full-time while in college and credits mentoring from CC faculty for his baccalaureate journey. Student narratives underscore the intersection of workforce realities, career aspirations, and the vertical, but often non-linear, transfer journeys of AAS students. These diverse experiences further the urgency to create accessible pathways for students.

The Personal Touch

For some AAS students in this study, AAS transfer paths were informed by pre-transfer guidance from two distinct sources. Even though many students experienced credit loss as they navigated requirements of different programs, several described proactive and personal outreach from university transfer advisors and program faculty to help maximize credit transfer to save time and money. Camila, who completed an AAS in paralegal studies, earned her bachelor's, and is now in law school, shared:

Once I applied to [private college], I had a specific advisor before I even decided that that's where I wanted to go. She would email me occasionally about things that I would need to know, events that were happening, just reminders that I need to send this in. She also answered a lot of my questions.

In other cases, CC faculty played a pivotal role in paving the way for students to attend the baccalaureate programs where they had graduated. Gracie, an adult learner pursuing a bachelor's in human services, learned much of what she knows from her CC instructor who is the AAS program director:

...that's basically where I got most of my information from was the teachers... [that instructor] had the most impact on me, she actually started the program at [private college] and then transferred to the [CC]. She's kind of like the backbone of the program at [private college]. So, she's kind of helped us through that transfer process...

Often, the interviewed participants described highly personalized guidance and CC faculty connections with private colleges and universities in NC. While we found AAS students transitioning to both public and private institution programs delivered in multiple formats, some of the private college programs discussed were able to provide a personal touch prior to transfer and offer accessible online programs that serve students around the state.

Summary of Key Findings

Finding 1: AAS Vertical Transfer Occurs in a Statewide Ecosystem

With only 39% of AAS transfer students following the primary CC-to-university feeder pattern and with 434 patterns from the 58 community colleges to 16 UNC System campuses in Fall 2024 alone, NC comprises a statewide AAS transfer ecosystem. And these figures do not include the many AAS to baccalaureate options among NC's private colleges and universities. While existing transfer policy depends mostly on institution-to-institution (bilateral) articulation for AAS transfer, the transfer pattern data supported with qualitative interviews show that many AAS students are navigating multiple transfer options with differing requirements. Online programs geared toward AAS students further expand opportunities beyond the confines of local or regional partnerships, showing the value of statewide approaches to AAS transfer.

Finding 2: Associate Degree Earning and Programs Matter for Transfer

Earning an associate degree is a significant predictor of transfer, whether the degree is a traditional transfer degree (AA/AS; 3.2 times higher odds than no associate degree) or an AAS (2.2 times higher odds) among transfer-intending students. Whether increased aspirations and transfer activity is associated with the presence of articulation agreements, career mentorship from CC instructors, or students uncovering the AAS as an “alternate transfer degree path” as described in a recent Belk Center reportⁱⁱⁱ, a significant connection occurs between AAS earning and transfer. In addition, the earning of AAS degrees in the areas of Business/IT and Health Sciences were also predictive of vertical transfer compared with other program areas. Our Business/IT finding further reinforces the Belk Center's conclusions that Business and Information Technology, two growth industries in NC, are associated with higher likelihood of AAS transfer following receipt of the degree.

Finding 3: Information Seeking is a Challenge, and a Personal Touch Can Make a Difference

AAS students described confusion about transfer options and credit mobility. This confusion played out around fundamental differences between AAS and transfer associate degrees, where to learn about AAS transfer options, and the varying requirements across universities. Each had the potential to lead to inefficient transfer journeys. Additionally, relatively few CCSSE respondents sought transfer advising, just 24%, even though they had aspired to transfer. Since AAS transfer is not normalized in state policy and information is posted mostly through individual university websites, many of the interview participants described how key institutional agents who provided personal attention were influential in their transfer journeys. Some were university program directors offering pre-transfer guidance, while others were CC faculty who were graduates of AAS completion programs. Even with a tendency to self-navigate, many participants valued individual attention to help navigate options. One downside, however, was that some students were only considering the options presented to them in absence of a transparent means to identify all options in NC.

Finding 4: Career Aspirations are Intertwined with Transfer Choices

Interview findings showed how AAS students often gained work experience while attending college, and that interactions with both CC faculty and employers helped to enhance baccalaureate aspirations. However, the association of career and transfer choices is nuanced as we saw some students opt out of further higher education to apply acquired skills to careers more immediately, while others sought additional education to gain advanced skills. AAS career and transfer journeys are highly individual.

Recommendations

- **Enhance transparency by including all bilateral AAS agreements among Transfer Guides on the CFNC website.** With hundreds of bilateral articulation agreements between individual institutions, there is not currently one location for AAS students and CC advisors to identify all transfer options. Knowing that many students self-navigate, a single repository would ensure that they knew all options and could more effectively and efficiently plan their transfer journeys.

- **Expand existing bilateral agreements across all CCs offering similar programs.** While additional uniform articulation agreements⁴ (UAAs) would provide the greatest flexibility to transfer from any CC to any participating NC university seamlessly, they are difficult to develop since participating universities must agree on pre-major requirements. Another option is to leverage existing bilateral agreements. With state-level NCCCS Curriculum Standards⁵, CC curricula within AAS majors have a great deal of consistency across colleges. Universities with bilateral articulation agreements could leverage statewide curriculum standards by opening up agreements to students from all 58 CCs that have similar programs. This strategy, already employed by some institutions, would expand the reach of transfer programs and embrace the statewide transfer ecosystem.
- **Provide opportunities for pre-transfer CC students in AAS programs to complete ACA 122: College Transfer Success.** Understanding that AAS completers comprise nearly one-in-five NCCCS-to-UNC System transfers, students need greater support to satisfy their transfer aspirations. With current data showing high levels of self-navigation and low levels of transfer advising among the AAS population, having the option to complete ACA 122 across the NCCCS would guarantee that interested AAS students receive pre-transfer guidance. While this practice occurs in some CCs, statewide expansion could be particularly relevant for students from all AAS program areas, including those with higher levels of transfer like Business and Health Sciences.
- **Identify all university programs through which AAS earners can complete a bachelor's degree in no more than 60 credit hours.** Many AAS students are career driven and highly focused on advanced academic content in their career area. However, some AAS students consider expanding areas of expertise, and we know from current data and previous literature that aspirations may be enhanced with the presence of transfer pathways. In an effort to be transparent about all options, public and private universities could identify baccalaureate programs with more generous credit acceptance that can be completed in 60 credit hours after earning any or a subset of AAS degrees.

⁴ Uniform articulation agreements for AAS programs are in place for Nursing (RN-to-BSN) & Early Childhood Education.

⁵ <https://www.ncccommunitycolleges.edu/college-faculty-staff/academics/programs/curriculum-standards/>

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Appendix A

Quantitative Sample		
Variable	Category	Frequency (% of Sample)
Age	18-24	386 (61%)
	25+	239 (38%)
	not available	10 (1%)
Gender Identity	Woman	353 (56%)
	Man	282 (44%)
Underrepresented Minority Status	Yes	275 (43%)
	No	360 (57%)
Attempted at Least One Developmental Course	Yes	347 (55%)
	No	288 (45%)
Early Momentum (24 or more credits during first 30 hours)	Yes	316 (50%)
	No	319 (50%)
Credential Completion	No associate degree	309 (48%)
	AAS	265 (42%)
	Transfer degree	61 (10%)
Program Cluster Enrollment	Business-related	209 (33%)
	Public Service-related	173 (27%)
	Health Science-related	168 (27%)
	Engineering, Industrial, & Transportation	85 (13%)
Vertical Transfer	Yes	138 (22%)
	No	497 (78%)

Appendix B

Qualitative Sample		
Descriptor	Category	Frequency (% of Sample)
Age	18-24	10 (24%)
	25+	31 (76%)
Gender Identity	Woman	27 (66%)
	Man	13 (32%)
	Non-binary	1 (2%)
Race/Ethnicity	African/American or Black	11 (27%)
	Asian/Asian American or Pacific Islander	2 (5%)
	Bi-racial	3 (7%)
	Hispanic/Latinx/a/o	5 (12%)
	White	20 (49%)
First-Generation College Student	Yes	31 (76%)
	No	10 (24%)
Employment	Full-time	14 (34%)
	Part-time	15 (37%)
	Not employed	12 (29%)