

Challenges for Successful Transfer From Community to Bachelor's Colleges: Views of Staff and Faculty With Transfer Responsibilities

A. W. Logue

The City University of New York

Kerstin Gentsch

The City University of New York

Yoshiko Oka

The City University of New York

David Wutchiett

The City University of New York

Stephanie Abbeyquaye

The City University of New York

Staff and faculty have influential roles in the success of students transferring from associate's- to bachelor's-degree programs (vertical transfer students). Our survey compared the reported views on transfer of 607 staff and faculty with transfer responsibilities in associate's or bachelor's programs at 19 City University of New York colleges. The findings included: (1) Staff reported feeling more confident in their responsibilities than did faculty. (2) Participants working with associate's-degree students were more likely to report their colleges had sufficient transfer-service resources. (3) Associate's-degree faculty were the least likely participant group to respond that the biggest barrier to the transfer process was GPA decline (transfer shock), and the most likely that it was credit transfer, whereas for bachelor's-degree faculty it was the reverse. These findings can inform policy and practice. For example, faculty may need more support in performing transfer-related duties, as well as support in bridging their differing views across college sectors, so that they can work together towards a common goal of transfer student success and higher education equity.

Keywords: transfer, faculty, staff, associate's program, bachelor's program

INTRODUCTION

Research has repeatedly shown that vertical transfer students (students who transfer from associate's to bachelor's programs) face particular challenges in obtaining a bachelor's degree. If two equivalent students both intend to obtain bachelor's degrees, and one begins college in a bachelor's program and the other in a community college (which necessitates transfer to obtain a bachelor's), the student who began in

the bachelor's college will be more likely to receive the bachelor's degree (Monaghan & Attewell, 2015; Scheld, 2023; Schudde & Brown, 2019; Witteveen & Attewell, 2020)

The leaks in the vertical transfer pipeline are extensive. For many reasons, approximately 42% of United States college students begin their postsecondary experience in an associate's-degree program (Shapiro et al., 2018), even though over 80% wish to obtain at least a bachelor's degree (Horn & Skomsvold, 2011). At least two-thirds of community college freshmen at The City University of New York (CUNY) state that their goal is to attain at least a bachelor's degree (Logue et al., 2022; C. Chellman, personal communication, November 2, 2021). Although 31% of associate's-program first-year students do transfer to a bachelor's program at some point within six years of beginning college (Shapiro et al. 2020), and 11% do receive a bachelor's degree within six years of beginning college (National Center for Education Statistics, 2020), clearly a great many community college students are not meeting their original educational goals. This is particularly unfortunate because, on average, lifetime earnings are greater with at least a bachelor's degree (Carnevale et al., 2021).

The leaks in the vertical transfer pipeline also have implications for higher education equity. In comparison to bachelor's programs, associate's programs tend to have higher percentages of students from underrepresented groups. For example, in fall 2019, 42% of students in United States public community colleges were Black or Hispanic, but only 31% of students in public bachelor's colleges were Black or Hispanic. As another example, in 2018-2019, 52% of first-time, full-time students in United States public community colleges received federal financial aid grants, but only 37% of first-time, full-time students in public bachelor's colleges received these grants (National Center for Education Statistics, 2021). At CUNY, in fall 2019, the percentages of Black/Hispanic, Pell recipient, first-generation college students in the community colleges were 67, 66, and 65, respectively, while in the colleges with bachelor's programs they were 52, 58, and 58, respectively (CUNY Office of Institutional Research and Assessment, 2020b). Due to these demographic differences between associate's and bachelor's programs, anything that makes it more difficult for a student to receive a bachelor's degree if that student begins college in an associate's program will disproportionately harm students from underrepresented groups.

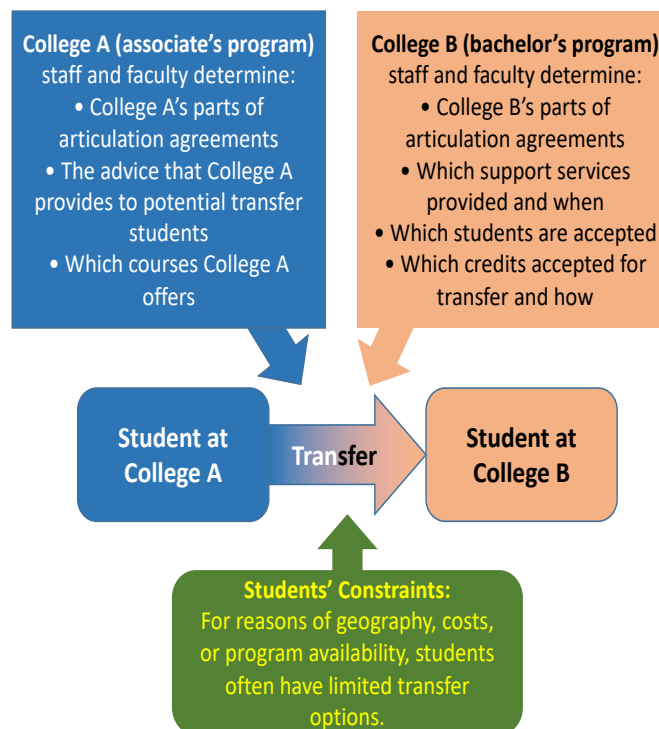
Many specific reasons have been given for the leaks in the vertical transfer pipeline, such as inadequate information about transfer (e.g. from advisers or websites), transfer shock (a possibly temporary decrease in GPA immediately after transfer, often attributed to inadequate preparation in the associate's program), complex/opaque transfer policies and procedures, and, especially, transfer credit loss or delay (Giani, 2019; Hayes et al., 2020; Hills, 1965; Packard et al., 2013; Schudde et al., 2020; Taylor, 2019; Wang, n.d.; Witteveen & Attewell, 2020).

Many institutions and states have sought to eliminate vertical transfer pipeline leaks, though often with little success. The difficulties posed by transfer are so profound and intractable that in 2021 *Inside Higher Ed* instituted a weekly blog initially titled "Tackling Transfer" (<https://bit.ly/3Qev7ZA>), and a few years ago the Education Commission of the States started tracking transfer and articulation policies in each state (Whinnery & Peisach, 2022).

A perspective based on organizational theory can be useful in helping us understand and explain some of the difficulties in facilitating vertical transfer. This theoretical framework conceptualizes these difficulties as produced by or emerging from broad systems, or political-ecological contexts, characterized by rules and norms, that together influence how various vertical transfer actors (students, advisers, faculty, administrators, etc.) interact and pursue their goals. These *strategic action fields* determine who does and obtains what in an existing power structure. The vertical transfer roles of administrators, staff, faculty, and students have been examined within this organizational theory (Schudde et al., 2021).

A critical aspect of the context for these actors and their roles is that transfer involves, by definition, more than one institution, each with its own distinctive mission and goals. Figure 1 helps illustrate the (by definition) dual-college nature of transfer. Both associate's- and bachelor's-degree higher education sectors carry responsibility for transfer's smooth functioning (Bahr et al., 2013; Elliott & Lakin, 2020; Wang, 2020). Transfer involves more than one set of institutional leaders, staff (employees without instructional titles), and faculty (employees with instructional titles), none of whom traditionally make decisions in collaboration with people at other institutions. Consider, for example, the construction of articulation

FIGURE 1
FUNCTIONS OF THE TWO COLLEGES INVOLVED IN VERTICAL TRANSFER



agreements. These agreements are essentially contracts involving two or more institutions that specify, primarily, how credits will transfer between the institutions (Taylor & Jain, 2017). The two institutions must come to a mutual agreement about the contents of these documents, implement their provisions, and maintain or improve the agreements over time. Substantial negotiation and compromise can be involved, taking long periods of time, sometimes through numerous personnel changes. For smooth transfer, not only do constituencies at different colleges need to concede some decision-making power, but they also need to do so in a way that closely coordinates the activities of two institutions.

Another way in which enhancing transfer between two institutions is difficult arises from the fact that each institution controls different aspects of—has different roles concerning—the transfer process. Consider two independent colleges: sending College A and receiving College B. It is usually College B that determines which credits will be accepted for transfer and how, and which support services will be provided to the transfer students and when, in addition to controlling which students are accepted for transfer. College A usually has little influence over these aspects of College B’s behavior. College B, on the other hand, cannot directly control the courses that College A offers, nor the advice that College A provides to potential transfer students. However, College B has the option of not accepting College A’s students, or of accepting College A’s students but denying transfer of their College A credits, and thereby requiring these transfer students to take additional courses. College B may be able to take these actions even with no advance notice to College A. Thus College B administrators, faculty, and staff set the rules and norms that govern key aspects of students’ transfer experience (Schudde et al., 2021).

The roles of college faculty and staff ensure that they themselves (these actors) particularly influence the flow of transfer pathways. It is college staff and faculty who provide potential transfer students with much of their information, provide newly transferred students with orientation and other support services, and (especially faculty) decide how credits transfer (Sutcliffe et al., 2023). As an illustration, bachelor’s faculty’s beliefs that transfer students from community colleges are inadequately prepared—whether true

or not—may hinder the development of articulation agreements (Bowker, 2021).

The incentive systems in place for institutions of higher education and their constituencies may also, inadvertently, provide challenges for smooth transfer. For example, receiving institutions and individual academic departments may be funded according to the numbers of students that they teach, and are thus incentivized to deny credit transfer. In addition, to keep teaching a course that they like to teach, faculty must obtain enrollment for that course, and one way to do that is by denying transfer credit, on a case-by-case or general policy basis (for discussion of related points see Dimino, 2020; Logue, 2017).

For all these reasons, in trying to set policies and practices to enhance transfer, it is essential to consider the views of staff and faculty at both associate's and bachelor's institutions. Faculty and staff at associate's and bachelor's institutions may view differently the transfer students and the challenges that they face. Such differing views, if not recognized, acknowledged, and considered by policy makers and administrators, have the potential to make it more difficult for transfer students to succeed, as well as for changes to be made that will increase transfer student success. Such evidence will help us determine whether differing views in these groups could be hindering smooth transfer and can inform and support evidence-based policies and strategies for facilitating transfer success (Mayhew et al., 2016).

However, there is little research—published in detail and with more than a couple of dozen participants—that has surveyed the views of staff or faculty whose work concerns transfer. Senie (2016) conducted interviews and focus groups with a total of ten staff and eleven faculty, as well as observing seven faculty meetings, to determine these actors' views concerning a specific new transfer policy. The results revealed a “cultural gap” between the community and university faculty that could hinder successful transfer. Schudde et al. (2021) reported the views of 15 staff (nine at a community college and six at a university) regarding a variety of transfer issues and found little cooperative effort between the community and university sectors that would enhance transfer success. DeWine et al. (2017) interviewed ten staff at one university concerning what services these staff provided to transfer students. Smith et al. (2021) gave a questionnaire to 179 faculty, staff, and administrators (only the total number of participants for these three groups was given) concerning resources that should be provided to STEM vertical transfer students who are members of underrepresented groups. Payne et al. (2022) surveyed 30 community college and 28 university cybersecurity faculty and found that faculty were, in general, relatively uninformed about transfer policies. In 2005-2006, Tobolowsky and Cox (2012) interviewed 2 faculty and 15 staff at a research university who reported that they faced many obstacles when trying to facilitate the success of transfer students. Hyatt and Smith (2020) conducted an additional survey with 12 faculty at a private university, assessing their views of community college transfer students and their apparently limited knowledge of transfer services and processes.

We conducted a survey of all staff and faculty with transfer responsibilities in both CUNY associate's and bachelor's programs. CUNY has 19 long-established undergraduate colleges: seven offering only associate's degrees (community colleges), three offering both associate's and bachelor's degrees (comprehensive colleges), and nine offering only bachelor's and graduate degrees (senior colleges; Table 1). The colleges range in size from less than 1,000 students to over 25,000 students and are in urban or suburban settings. Our specific research questions were:

- Do faculty and staff differ in their views regarding transfer?
- Do the views of associate's-degree faculty and staff differ from those of their counterparts at bachelor's-degree colleges?
- Are any observed differences in views likely to hinder smooth transfer? If so, what policies and practices would meliorate or remove these hindrances?

This study's overall purpose was to determine how the views of staff and faculty who have transfer responsibilities, people who are particularly influential actors in the processes and success of vertical transfer, might indicate potential areas of challenge for transfer, challenges that could be meliorated through changes in policy and practice. Such changes could enhance social mobility and higher education equity, enabling students who begin their postsecondary education at a community college to receive a bachelor's degree with no more challenges than a similar student who begins in a bachelor's program.

TABLE 1
THE 19 COLLEGES AND THEIR SURVEY INVITEES AND PARTICIPANTS

College	Degrees offered ^a	Fall 2018 student headcount ^b	Number invited	Number responded	Response rate (%)
A	a	25,063	109	46	42.2
B	a	9,533	68	50	73.5
C	a	941	9	8	88.9
D	a	6,563	55	41	74.5
E	a	10,506	29	21	72.4
F	a	15,592	50	43	86.0
G	a	13,101	118	71	60.2
H	a,b	11,815	60	13	21.7
I	a,b	5,919	48	19	39.6
J	a,b	16,204	46	31	67.4
K	b	14,629	25	21	84.0
L	b	13,954	24	20	83.3
M	b	12,503	128	28	21.9
N	b	16,205	8	8	100.0
O	b	12,852	43	19	44.2
P	b	11,559	99	82	82.8
Q	b	15,645	129	48	37.2
R	b	1,973	43	37	86.0
S	b	7,126	20	16	80.0
Total	---	221,815	1,111	622	56.0

^aa = associate’s degrees, b = bachelor’s degrees

^bEach student is counted once, no matter in how many courses the student was enrolled. Source: CUNY Office of Institutional Research and Assessment (2020a).

METHOD

Participant Recruitment

To conduct this research, we needed a list of all CUNY staff and faculty with transfer responsibilities. Given that each CUNY college is organized differently, with people with transfer responsibilities having different job titles and being located within different college structures, to obtain this list we asked the colleges for the names of all people who met the following criteria:

- [at community colleges] “anyone who works with students at your college who are considering, planning, or pursuing transfer to a bachelor’s-degree program,”
- [at comprehensive and senior colleges] “a relevant staff member is anyone who works with students who have previously pursued (but not necessarily completed) an associate’s degree.”

We further stated that these lists:

- should include “staff who work on any transfer-related service, including but not limited to transfer process support, admissions, enrollment, transfer credit evaluation, advising,

- registration, orientation, academic support, financial aid;”
 - “and that the list may include staff from any office or academic department, including but not limited to administrative staff, faculty, and higher-level administration (e.g. deans).”
- and that the people included
- “do not necessarily need to work exclusively with transfer students, but transfer students should be a significant part of their job.”

We received lists from all 19 colleges, totaling 1,111 verified employees, a range of 8 to 129 per college (Table 1).

Survey Instrument

The survey (<https://bit.ly/44J4QHe>) included questions in yes/no, multiple choice, 7-point continuous Likert scales, and open-ended formats. The questions asked about:

- participants’ positions, duties, and the nature of their transfer student service,
- participants’ confidence in their use of CUNY transfer-related software, as well as participants’ knowledge about CUNY transfer policies, and
- participants’ views of the challenges associated with the transfer process.

The last set of questions was developed based on: (a) the prior research reviewed above on the views of faculty and staff who work with transfer, (b) prior research concerning the major challenges to transfer student success (particularly inadequate advising, transfer shock, and credit transfer), (c) the transfer information available on the websites and printed materials of six CUNY colleges, and (d) guidance and survey testing from a panel of about 30 transfer researchers and transfer professionals (members of CUNY’s Transfer Opportunity Project, TOP).

Depending on a participant’s answers to the position and duties questions, each participant entered a specific branch of the survey with some questions differing across branches. There were two major branches—one for participants who work mostly with potential transfer students (associate’s-degree students), and one for participants who work mostly with students who have transferred (bachelor’s-degree students). The associate’s-degree branch was subdivided into five subbranches for participants who work primarily in academic advising, transfer support, career services, financial aid, or another transfer area. The bachelor’s-degree branch was divided into seven subbranches for participants who work primarily in transfer student outreach, orientation, transfer credit evaluation, academic advising and registration, academic support, financial aid, and another transfer area. Table 2 lists the 12 branches, which each totaled between 36 and 47 questions. As an example of how questions differed across branches, academic advisers of potential transfer students were asked “What topics are covered in your academic advising of potential transfer students to bachelor’s degree programs?” However, participants who work in financial aid with potential transfer students were instead asked “What topics are covered in your financial aid advising of potential transfer students to bachelor’s degree programs?”

Survey Administration

In February 2019, an email invitation to complete the survey was sent to each person on the colleges’ lists, with a one-week completion deadline. Three email reminders, including an extension of the completion deadline by two weeks, were sent to nonrespondents. Each invitation or reminder included a survey link specific to the addressee. The initial email invitation (<https://bit.ly/3OxPJuj>) stated that the survey was for a grant-funded research project concerning the factors associated with the leaks in the transfer pipeline, that the invitation’s recipient was being asked to complete the survey because the recipient has transfer responsibilities, and that that the survey would take approximately 15 minutes and was completely voluntary. During the survey’s fielding, college leaders were sent updates on the overall response rates for every college and asked to encourage survey invitees to respond. Members of TOP also encouraged invitees to respond. The survey was administered using the Qualtrics platform.

TABLE 2
NUMBERS OF STAFF AND FACULTY PARTICIPANTS FOR EACH SURVEY BRANCH

Branch	Staff	Faculty
Services for associate's-degree students		
Academic advising	152	39
Financial aid	4	0
Transfer support	47	6
Career services	4	0
Other	43	10
Total	250	55
Services for bachelor's-degree students		
Academic advising and registration	80	32
Financial aid	18	0
Orientation	12	1
Transfer credit evaluation	27	11
Transfer student outreach	16	2
Academic support	7	5
Other	65	26
Total	225	77

RESULTS

Analytic Strategy

Several decisions were made regarding which participants and survey questions to include in the analyses and how to aggregate the results across participants.

The first decision concerned which participants to include. Table 1 shows the number of participants (a total of 622), separately for each college and combined, for an overall response rate of 56.0%, ranging from 21.7% to 100.0% for each college. Of these 622 participants, 15 were administrators (employees at administrative ranks of associate dean and above), 475 were staff, and 132 were faculty. Given the small number of administrator participants, we decided to include in our analyses only the 607 staff and faculty.

The next decision concerned whether we should analyze the data by individual colleges' or only in the aggregate. As indicated in Table 1, the number of people on the colleges' lists varied between 8 and 129, perhaps due to some colleges not putting all employees with transfer responsibilities on their lists, or to some colleges simply having fewer people with transfer responsibilities. Regardless, due to the imbalance in different colleges' list sizes, the data are comprised more of the views of people at some colleges than others. Therefore, should the colleges differ in their views, the views of colleges with more participants would be more represented in the data. Unfortunately, the numbers of participants at 12 of the 19 colleges are less than 40 and are thus too small to test that possibility. Similarly, eleven of the colleges

included faculty names on their invitation lists, and eight did not. Thus, the study's staff findings come from 19 colleges, but the study's faculty findings come from 11 colleges. This imbalance may have been due to only some colleges having faculty with transfer responsibilities, but also again raises the possibility that the survey participants are not representative of all CUNY employees (particularly faculty) with transfer responsibilities. The study's faculty results may be overweighted by views at the colleges that provided faculty names. Once again, however, the numbers of participants at individual colleges are too small to test whether faculty views differed across colleges. For all these reasons, analyzing individual colleges' data was not a fruitful approach and, instead, the data were aggregated across colleges.

Our next decision was whether to separate the participants' data by survey subbranch. Table 2 shows the number of staff and faculty participants for each subbranch. Only five of 12 subbranches had 50 or more participants, and those numbers are further subdivided into staff and faculty participants. We therefore decided not to separate the participants' data by subbranch (with two exceptions for the most populous subbranch [academic advisers] described below).

We did have sufficient participants to combine them into the four groups of actors with particularly influential roles in vertical transfer: faculty and staff who work primarily with associate's- or bachelor's-degree students. As shown in Table 2, the number of participants in each of these four groups is between 55 and 250, more than in any previous study. Table 3 shows both similarities and differences in the demographic characteristics of these four groups, as well as of all full-time CUNY 2019 staff and faculty. For each of the four participant groups there was a higher percentage of female participants than for the entire set of CUNY 2019 staff and faculty. In addition, the percentages of Hispanic-Latinx participants were lower, and the percentages of White participants were higher, for staff who work with bachelor's- as compared to associate's-degree students. Faculty participants were, on average, older than staff participants, and, for those participants providing services for associate's-degree students, the faculty had spent somewhat more years in their positions. The racial/ethnic percentages of all participants combined were within 4.5 percentage points of all CUNY full-time 2019 staff and faculty, and the participants' mean age was within the median age range of all CUNY staff and faculty. Given CUNY Human Resources would not provide us with demographic information for staff and faculty invited to participate but who did not respond (or with individual demographic data for anyone; see Table 3), it is not clear whether invitees with certain characteristics were more likely to respond, or the colleges tended to identify people with certain characteristics as appropriate for the survey. Regardless, 56% of those invited to participate did so. Thus, the participants largely represented the staff and faculty whom the colleges identified as appropriate for the survey.

The last decision concerned which survey questions to include in the analyses. Some of the questions were designed specifically to help CUNY better deliver its transfer services (e.g., "Which computer system do you use most frequently to assist potential transfer students to bachelor's degree programs"). Here we focus on questions whose answers appear to have utility beyond CUNY, that are not specific to particular branches, and that allow for comparisons between associate's and bachelor's staff and faculty who have transfer responsibilities.

The following analyses are divided into two parts. First are descriptive analyses involving 12 sets of comparisons, using the results from nine survey questions asked of all participants and a tenth question asked of all participants who self-identified as academic advisers (the academic advisers were the only subbranch category with enough participants for a comparison between associate's and bachelor's participants). Each of the 12 sets compares (1) all participants working with associate's-degree students and all those working with bachelor's-degree students, (2) all staff with all faculty, (3) staff and faculty working with associate's-degree students, and (4) staff and faculty working with bachelor's-degree students (a total of four significance tests for each of the 12 sets of comparisons). These comparisons, both statistically and visually, demonstrate how these particular four groups of vertical-transfer actors differ in their answers to specific questions.

The second set of analyses utilizes regression to identify statistically significant associations between specific predictor variables and the answers to individual survey questions, while controlling for other predictor variables. The outcome variables consisted of the answers to the same questions used for the

TABLE 3
STAFF AND FACULTY CHARACTERISTICS

Characteristic	Staff	Faculty
Participants providing services for associate's-degree students		
Percentage female	73.6	56.4
Percentages Asian-Pacific Islander/Black-African American/Hispanic-Latinx/White	7.2/31.6/ 32.8/26.0	20.0/12.7/ 12.7/54.5
Age at time of survey M(SE)(N)	41.7(0.7)(250)	52.0(1.3)(55)
Median time in position	1-3 years	3-5 years
Percentage work in academic advising office	60.8	70.1
Amount work related to vertical transfer students M(SE)(N)	5.0(0.1)(248)	4.2(0.2)(53)
Participants providing services for bachelor's-degree students		
Percentage female	66.2	58.4
Percentages Asian-Pacific Islander/Black-African American/Hispanic-Latinx/White	8.0/23.1/ 22.7/44.0	6.5/15.6/ 7.8/68.8
Age at time of survey M(SE)(N)	45.1(0.8)(225)	55.6(1.4)(77)
Median time in position	3-5 years	3-5 years
Percentage work in academic advising office	35.6	41.6
Amount work related to vertical transfer students M(SE)(N)	4.3(0.1)(224)	3.5(0.2)(76)
All staff and faculty participants		
Percentage female	67.4	
Percentages Asian-Pacific Islander/ Black-African American/Hispanic-Latinx/White	8.6/24.7/ 24.1/40.7	
Age at time of survey M(SE)(N)	45.7(0.5)(607)	
Median time in position	1-3 years	
Percentage work in academic advising office	49.9	
Amount work related to vertical transfer students M(SE)(N)	4.5(0.1)(601)	
All CUNY full-time 2019 staff and faculty combined		
Percentage female	52.5	
Percentages Asian-Pacific Islander/Black-African American/Hispanic-Latinx/White	12.8/24.1/ 20.0/43.2	
Age in 2019	Median 40-55	

Note. The great majority (94%) of the participants were full-time employees. Demographic information was available from CUNY's Office of Human Resources Management only for the four groups of participants and for all combined CUNY staff and faculty (CUNY Office of Human Resources Management, 2019), not for individual participants.

preceding descriptive analyses. Ordinary Least Squares (OLS) regression was used for continuous outcome variables and Logistic Regression for categorical outcome variables. For each outcome, three regression models were used: Model 1 includes the predictor variables of position (faculty or staff) and program (works with associate's or bachelor's students), and Model 2 adds a position x program interaction term. Thus, these two models involve the two variables used in the descriptive models, with the addition in Model 2 of the interaction term. Model 3 adds three predictor variables—the three additional participant characteristics for which we have individual participants' data (time-in-position, whether a participant is an adviser, and the portion of the participant's work that is related to transfer students; Table 3). The three models are:

$$y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \varepsilon \quad (1)$$

$$y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 (x_1 \times x_2) + \varepsilon \quad (2)$$

$$y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 (x_1 \times x_2) + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \varepsilon \quad (3)$$

where y_i represents outcome variable i , β_0 the equation constant, x_1 whether a participant is staff or faculty, x_2 whether a participant works with associate's or bachelor's students, $(x_1 \times x_2)$ the interaction between x_1 and x_2 , x_4 the length of time a participant has been in their position, x_5 the portion of work related to transfer students, x_6 whether a participant is an academic advisor or not, β_1 through β_6 coefficients, and ε represents an error term. Given that Model 3 thus involved six predictors, lasso regression was used to identify the subset of variables best able to parsimoniously predict each outcome (Tibshirani, 1996). Only the subset of selected variables was included during estimation of Model 3 using OLS or logistic regression.

Descriptive Analyses

Table 4 provides details of the statistically significant comparisons between the four groups of participants for each survey question (using t tests for continuous variables and chi-square tests for categorical variables). Following are the specific results for all comparisons between the four groups.

Transfer Knowledge and Transfer Service

Figure 2 shows the mean ratings made by the four categories of participants in response to six questions concerning the participants' transfer knowledge and transfer service. In comparison to staff, faculty gave lower ratings for their and their colleges' transfer knowledge and service.

The first question in Figure 2 (panel A) is: "How confident do you feel about your understanding of university policies about transfer?" (from 1 very unconfident to 7 very confident). Over all participants, the mean rating was 5.6 ($SD = 1.3$, $n = 536$, 95% CI[5.5,5.7]), between somewhat confident and confident. Faculty, in comparison to staff, reported feeling less confident in their understanding of university transfer policies. Although the difference between all participants working with associate's-degree students and all participants working with bachelor's-degree students was not significant, all comparisons of staff and faculty were significant.

The next question (panel B) shows the mean ratings in response to the question: "How confident do you feel in using" the software system you use most frequently to assist potential or actual transfer students? (from 1 very unconfident to 7 very confident). Over all participants, the mean rating was 5.8 ($SD = 1.3$, $n = 534$, 95% CI[5.7,6.0]), again between somewhat confident and confident. Faculty reported feeling less confident in their use of transfer software than did staff. There was again no significant difference between all participants working with associate's-degree students and all working with bachelor's-degree students. However, all comparisons of staff and faculty were significant.

Panel C shows the mean ratings made by the four categories of participants in response to the question: "How effective do you think your campus is in supporting [potential vertical transfer students or

TABLE 4
T AND CHI-SQUARE TEST RESULTS FOR STAFF VS. FACULTY, AND ASSOCIATE’S VS. BACHELOR’S COMPARISONS

t Tests	All Staff vs. All Faculty			Associate’s: Staff vs. Faculty			Bachelor’s: Staff vs. Faculty			Associate's vs. Bachelor's		
	<i>df</i>	<i>t(df)</i>	Cohen's <i>d</i>	<i>df</i>	<i>t(df)</i>	Cohen's <i>d</i>	<i>df</i>	<i>t(df)</i>	Cohen's <i>d</i>	<i>df</i>	<i>t(df)</i>	Cohen's <i>d</i>
Confident understand policies	534	4.68***	0.50	274	4.21***	0.67	258	2.68**	0.39	534	0.93	0.08
Confident using computer system	532	5.77***	0.62	271	4.20***	0.69	259	3.81***	0.55	532	1.48	0.13
How effective campus at supporting transfer students	528	4.37***	0.47	267	3.69***	0.60	259	2.58*	0.37	528	0.29	0.03
Campus has adequate resources to support transfer service	522	2.45*	0.27	269	1.20	0.20	251	1.70†	0.25	522	4.28***	0.37
Chi-square tests	<i>x2(1)</i>	Cramer's <i>V</i>		<i>x2(1)</i>	Cramer's <i>V</i>		<i>x2(1)</i>	Cramer's <i>V</i>		<i>x2(1)</i>	Cramer's <i>V</i>	
Communicate with other offices never/rarely		47.61***	.30		18.53***	.26		32.14***	.35		1.76	.06
Hours available nights or weekends		23.56***	.21		17.96***	.26		8.69**	.18		2.74†	.07
Post-transfer GPA-decline is the biggest barrier		0.49	.03		5.99*	.15		4.57*	.14		17.89***	.19
Credit transfer is the biggest barrier		1.03	.04		5.89*	.15		0.32	.04		4.53*	.09

*** = $p < .001$, ** = $p < .01$, * = $p < .05$, † = $p < .1$.

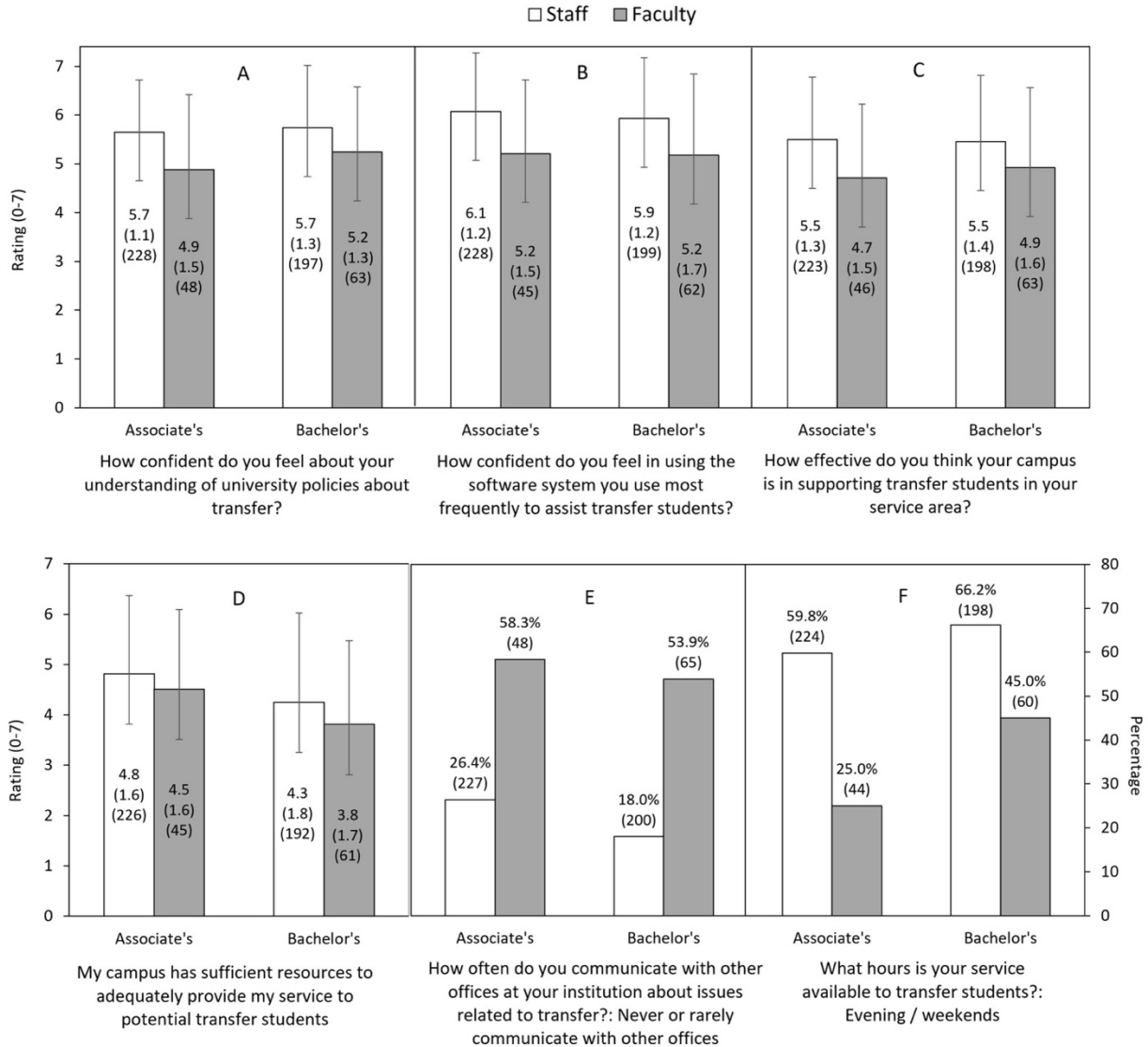
transfer students from associate degree programs] in your service area?” (from 1 very ineffective to 7 very effective). Over all participants, the mean rating was 5.3 (SD = 1.4, $n = 530$, 95% CI[5.2,5.5]), between somewhat effective and effective. Staff reported their service was better supported by their college than did faculty. There were again no significant differences between participants working with associate’s- and bachelor’s-degree students. However, all comparisons between staff and faculty were significant.

Panel D shows the mean ratings made by the four categories of participants in response to the question “To what extent do you agree with the following statement? My campus has sufficient resources to adequately provide my service to potential transfer students” (from 1 strongly disagree to 7 strongly agree). Over all participants the mean rating was 4.5 (SD = 1.7, $n = 524$, 95% CI[4.32,4.61]), between neither agree or disagree and somewhat agree. Staff working with associate’s-degree students gave the highest ratings, and faculty working with bachelor’s-degree students gave the lowest. In this case, all participants working with associate’s-degree students combined gave significantly higher ratings than did all participants working with bachelor’s-degree students. In addition, all staff combined were significantly more likely to give higher ratings than all faculty combined. (There were, however, no significant differences between staff and faculty working with associate’s-degree students, or between staff and faculty working with bachelor’s-degree students.)

Panel E shows the percentages of participants who, in response to the question: “How often do you communicate with other offices at your institution about issues related to transfer?” responded never or rarely. Over all participants this value was 29.4%. Faculty, in comparison to staff, were more likely to report that they never or rarely communicate with other offices about issues related to transfer. However, participants working with associate’s-degree, as compared to bachelor’s-degree, students did not differ. There was no significant difference between all participants working with associate’s-degree students and all working with bachelor’s-degree students. However, all staff and faculty comparisons were significant.

Finally, panel F in Figure 2 shows the percentages of the four categories of participants who, in response to the question: “What hours is your service available to [potential or actual] transfer students?” indicated that it was available evenings and/or weekends. Over all participants, this value was 57.6%. Faculty were less likely than staff to report that their type of transfer service is available evenings and/or weekends. There were no significant differences between participants working with associate’s- and bachelor’s-degree students. However, all comparisons between staff and faculty were significant.

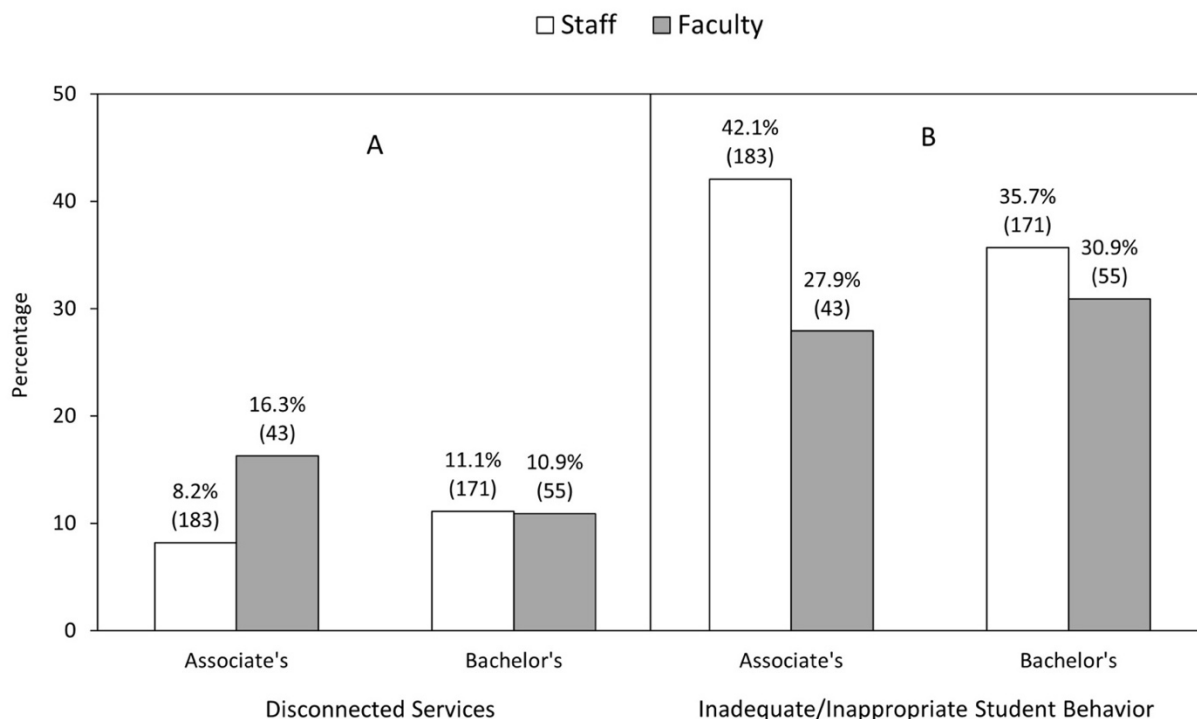
FIGURE 2
ANSWERS TO QUESTIONS CONCERNING TRANSFER KNOWLEDGE AND SERVICE



Main Challenges With Your Service

Figure 3, panel A, shows the percentages of the four categories of participants who, in response to the (open-ended) question: “In your opinion, what are the main challenges with your service for [potential or actual] transfer students?” made a response categorized as services were disconnected. Overall, the percentage was 10.4%. Faculty and staff participants, and participants who work with associate’s- and bachelor’s-degree students, responded similarly. None of the comparisons among the four participant categories were significantly different. Panel B shows the percentages of the four categories of participants who, in response to the same question, made a response categorized as student behavior was inadequate or inappropriate. A total of 36.3% of the overall sample gave this response. Again, faculty and staff participants, as well as participants who work with associate’s- and bachelor’s-degree students, responded similarly. None of the comparisons among the four participant categories were significantly different. Overall, all four participant groups responded similarly concerning the challenges for their transfer service.

FIGURE 3
ANSWERS TO QUESTION: “IN YOUR OPINION, WHAT ARE THE MAIN CHALLENGES WITH YOUR SERVICE FOR TRANSFER STUDENTS?”



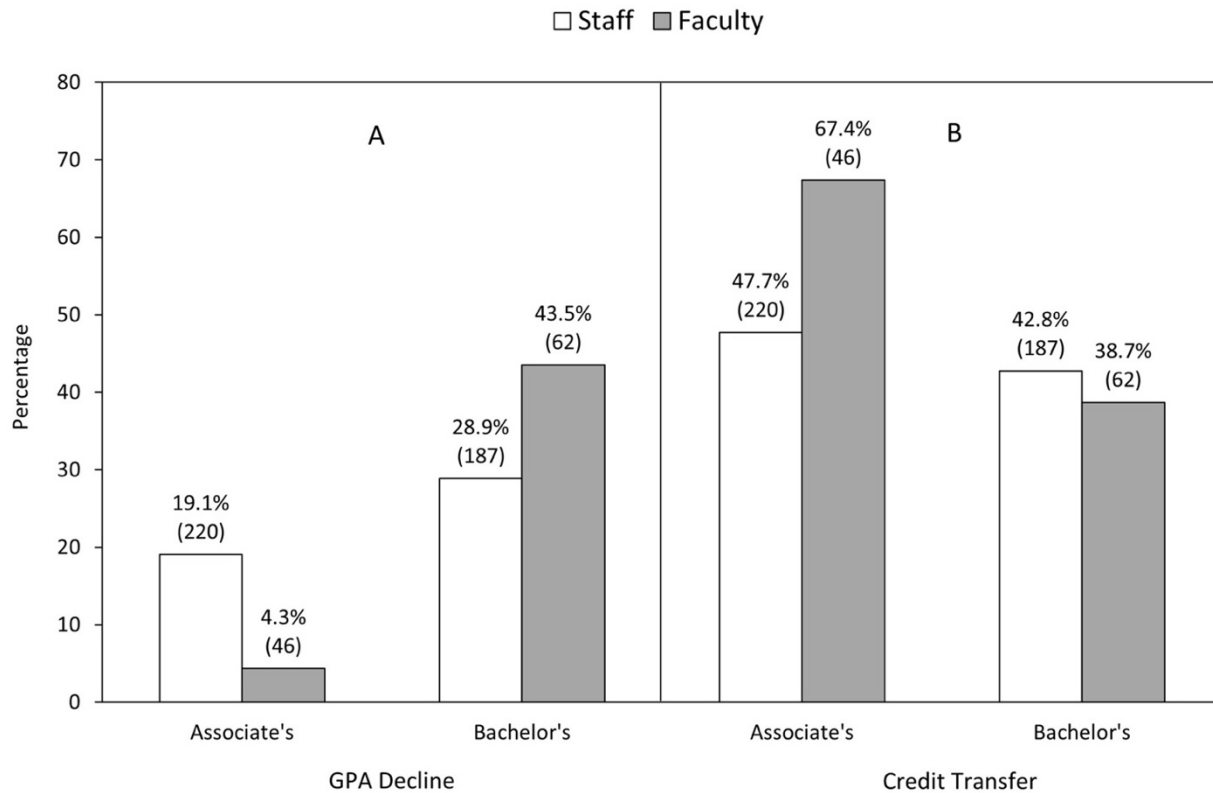
Barriers for Transfer Students

Figure 4 reports the percentages of the four categories of participants who gave particular answers to the question: “In your opinion, which stage of the transfer process presents the biggest barrier for students?” Overall, participants working with associate’s-degree students were more likely to report lack of credit transfer as the biggest barrier, whereas participants working with bachelor’s-degree students were more likely to report GPA decline as the biggest barrier, and this difference was larger in faculty.

Panel A shows the percentages of answers indicating that the biggest barrier was the decline in GPA that occurs following transfer (i.e., transfer shock). Combined across all participants, this value was 24.5%. Faculty working with associate’s-degree students were least likely (4%) to indicate that GPA decline was the biggest barrier to transfer student success, and faculty working with bachelor’s-degree students were most likely (44%). Together, participants who work with associate’s-degree as compared to bachelor’s-degree students were significantly less likely to report GPA decline as the largest barrier (GPA decline was the most frequently given response for participants working with bachelor’s-degree students). The comparison between all staff combined and all faculty combined was not significant. However, both comparisons between staff and faculty (for participants working with associate’s-degree students and for participants working with bachelor’s-degree students) were significantly different, but in opposite directions: Among participants working with associate’s-degree students, staff were more likely to report GPA decline as a barrier than were faculty, but among participants working with bachelor’s-degree students, faculty were more likely to report GPA decline as a barrier than were staff.

Panel B shows percentages of answers in which participants stated that the biggest barrier to transfer student success was transfer of credits from an associate’s-degree program to a bachelor’s-degree program. Combined across all participants, this value was 46.6% (the most frequent of all answers). In contrast to the findings for GPA decline, faculty working with associate’s-degree students were most likely (67%) to indicate that credit transfer was the biggest barrier, and faculty working with bachelor’s-

FIGURE 4
ANSWERS TO QUESTION: “IN YOUR OPINION, WHICH STAGE OF THE TRANSFER
PROCESS PRESENTS THE BIGGEST BARRIER FOR STUDENTS?”



degree students were least likely (39%), the opposite of the findings for GPA decline. Participants who work with associate’s-degree as compared to bachelor’s-degree students were significantly more likely to report credit transfer as the biggest barrier (51.1% compared to 41.8%). The comparison between all staff combined and all faculty combined was not significantly different. However, for participants working with associate’s-degree students, staff were significantly less likely to report credit transfer as the biggest barrier than were faculty). (The comparison between staff and faculty for participants working with bachelor’s-degree students was not significantly different.)

Regressions

The results of the regressions (Table 5) were consistent with, and supplemented, the results from the descriptive analyses. With all three regression models, staff (as compared to faculty) reported they were more confident in understanding transfer policies, more confident in using relevant computer software, communicated more often with other offices, provided a service that was more available nights and weekends, felt their campus was more effective at supporting transfer students, and felt their campus has sufficient resources to support transfer students. In addition, as with the descriptive analyses, faculty and staff did not significantly differ in their reported views concerning the challenges facing their services. When participants who worked with associate’s- as compared to bachelor’s-degree students were compared, those who worked with associate’s-degree students reported less confidence in their understanding of transfer policies, reported communicating more often with other offices, and gave higher ratings for their colleges having sufficient resources to support transfer students. The regression analyses also revealed that the longer someone had been in their position, the more confident they were that they

TABLE 5

PARTICIPANT CHARACTERISTIC RELATIONSHIPS WITH SURVEY RESPONSES: OLS & LOGISTIC REGRESSION MODEL ESTIMATES

	Confident understand policies (OLS)			Confident using computer system (OLS)			Communicate with other offices never/rarely (Logistic)			Hours service available nights or weekends (Logistic)			How effective campus is at supporting transfers (OLS)		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Faculty	-.63*** (.13)	-.50** (.18)	-.35* (.19)	-.80*** (.14)	-.75*** (.19)	-.64*** (.18)	1.53*** (.23)	1.67*** (.31)	1.38*** (.24)	-1.13*** (.23)	-.87** (.30)		-.65*** (.15)	-.53** (.20)	-.43* (.19)
Works With Associate's Students				.11 (.11)	.14 (.13)		.41* (.20)	.49* (.24)	.54* (.22)	-.39* (.18)	-.27 (.20)		-.01 (.12)	.04 (.13)	
Faculty x Works With Associate's Students															
Time in Position			.12* (.05)			.05 (.06)									.06 (.06)
Academic Advising			.36*** (.11)			.31** (.11)			.37† (.21)						
Amount Work Related To Transfer Students ^c			.32*** (.06)			.27*** (.06)			-.48*** (.11)						.17** (.06)
Constant	5.77	5.74	5.24	5.95	5.93	5.65	-1.47	-1.52	-1.23	.73	.67		5.48	5.46	5.27
Observations (n)	536	536	532	534	534	530	540	540	536	526	526		530	530	526
Adjusted R ² /Pseudo R ²	.04	.04	.12	.06	.06	.13	.09	.09	.13	.05	.05		.03	.03	.05

	Campus has adequate transfer resources (OLS)			Main challenge: disconnected services (Logistic)			Main challenge: student behavior/issues (Logistic)			Biggest barrier: Post-transfer GPA-decline (Logistic)			Biggest barrier: Credit transfer (Logistic)		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3 ^b
Faculty	-.38* (.18)	-.44† (.24)	-.34† (.19)	.35 (.35)	.02 (.50)		-.37 (.25)	-.21 (.33)		.08 (.25)	.64* (.30)	.51 (.31)	.27 (.22)	-.17 (.30)	-.18 (.31)
Works With Associate's Students	.59*** (.15)	.57*** (.16)	.43** (.15)	-.12 (.31)	-.34 (.36)		.13 (.20)	.20 (.22)		-.88*** (.21)	-.54* (.24)	-.42† (.25)	.40* (.18)	.20 (.20)	.20 (.21)
Faculty x Works With Associate's Students		.13 (.36)			.80 (.70)			-.35 (.50)	-.25 (.36)		-.229** (.80)	-.227** (.81)		.99* (.45)	.91* (.46)
Time in Position			-.10 (.07)						-.28** (.10)			.05 (.11)			.01 (.09)
Academic Advising			.23 (.15)									-.09 (.22)			.12 (.19)
Amount Work Related To Transfer Students ^b			.11 (.08)					.22* (.11)				-.19† (.22)			-.06 (.10)
Constant	4.24	4.25	4.49	-2.18	-2.08		-.55	-.59	.28	-.75	-.90	-1.03	-.40	-.29	-.38
Observations (n)	524	524	520	452	452		452	452	449	515	515	512	515	515	512
Adjusted R ² /Pseudo R ²	.04	.04	.04	.003	.01		.01	.01	.03	.03	.06	.06	.01	.02	.02

Note. OLS regression cells show Adjusted R², coefficients, and standard errors; logistic regression cells show Cox and Snell's Pseudo R², odds ratios, and standard errors. There are three regression models for each outcome. Model 3 shows only the subsets of variables (which in two cases was a null set) identified by lasso regression as adding predictability to the variables used in Model 2.

^aThis survey item was only asked of participants who described their primary role as academic advising.

^bThe predictor variable of amount of work related to vertical transfer students was standardized ($M = 0, SD = 1$)

*** = $p < .001$, ** = $p < .01$, * = $p < .05$, † = $p < .1$.

understood transfer policies (though there was no relationship with confidence in using relevant software), and the less likely they were to report that the main challenge for their transfer service was student behavior. In addition, participant academic advisers reported being more confident in their understanding of policies and in using relevant software than did other participants. Participants' ratings of how much their work involved transfer were positively related to their reported confidence in understanding transfer policies and in using relevant software, their ratings of how effective their campuses are in supporting transfer, and whether they reported that the main challenge with their work was student behavior; and negatively related to their frequency of interaction with other offices.

Most notably, the regression analyses revealed significant interactions between a participant (a) being classified as faculty or staff, and (b) working with associate's or bachelor's students, using the outcome variables of GPA decline and credit transfer as the biggest barriers to transfer student success. The descriptive results above help clarify this interaction: Associate's-degree faculty were most likely to report that the biggest barrier is credit transfer, and bachelor's-degree faculty were most likely to report that the biggest barrier is GPA decline.

DISCUSSION

This study examined the views of staff and faculty who have transfer responsibilities, people who are particularly influential actors in the processes and success of vertical transfer. The results revealed both similarities and differences in the reported views of staff and faculty participants, and in the reported views of participants working with associate's-, as compared to bachelor's-degree, students. The findings suggest that faculty may not be functioning as well as staff in some aspects of transfer student support, and that differing views across college sectors, particularly among faculty, may inhibit the facilitation of vertical transfer student success (consistent with the findings discussed above of Hyatt & Smith, 2020, Schudde et al., 2021, and Senie, 2016).

Considering the differing views in more detail, when asked what was the biggest barrier to the transfer process, of the four participant groups, faculty working with associate's-degree students were the least likely to respond that it was GPA decline (transfer shock) and the most likely to respond that it was credit transfer, but faculty working with bachelor's-degree students were the most likely to respond that it was GPA decline and the least likely to respond that it was credit transfer. Transfer credit is ultimately the decision of the receiving college, and any GPA decrease in transfer students may be due to insufficient preparation of these students at their previous institutions, a concern expressed by the participants in Bowker (2021). Thus, many associate's- and bachelor's-degree faculty may be viewing transfer challenges as caused by someone or something other than themselves, and as related to a college other than their own. The fact that differing views on GPA decline and credit transfer were exhibited more in faculty than staff may be because grades and credits are areas over which faculty usually have primary responsibility (AAUP, 2015; Sutcliffe et al., 2023).

In contrast, staff and faculty, both those who work with associate's-degree students and those who work with bachelor's-degree students, have similar views regarding the specific challenges that make it difficult for them to provide their transfer services. About 10% of all participants reported that transfer services were disconnected, and over one-third that student behavior was inadequate or inappropriate, although participants with more time in their positions were less likely to give the response of inappropriate student behavior.

In terms of their own performance of transfer services, staff consistently reported feeling more confident and performing to a higher standard than did faculty. If such responses accurately reflect behaviors, it would seem that faculty are performing less well than staff with regard to transfer services. However, the present results do not speak to faculty's and staff's transfer advising quality in specific areas not covered by this study's survey (such as advising students on the optimal transfer destination for specific fields of study). The findings do provide new information regarding the possible differing experiences of faculty and staff in advising transfer students, as described by Hayes et al. (2020).

Turning to comparisons of survey answers of participants working with associate's- or bachelor's-

degree students, their most noted difference was whether they reported that their colleges had sufficient resources to adequately provide the participant's transfer service. Participants working with associate's-degree students were more likely to give high ratings on this item. Bachelor's-degree staff and faculty may feel generally less supported in their transfer work than do the associate's-degree staff and faculty.

The results suggest several specific actions that institutions of higher education can take to facilitate transfer. First, institutions should assess the skills and knowledge of anyone who is working with potential or actual transfer students and provide professional development if needed. If faculty are to provide support to transfer students, they, and not just staff, need support in order to perform adequately.

Second, institutions should address the differing views of faculty working with associate's- and bachelor's-degree students regarding challenges to transfer student success. These differing views may make it difficult for these two higher education constituencies to engage in collaborative behaviors to enhance that success. Faculty working with associate's-degree students may be inclined to think that if the bachelor's institutions would simply accept more credits then transfer students would be more successful, but faculty working with bachelor's-degree students may be inclined to think that if the associate's institutions would teach better courses (or if the bachelor's institutions would take more freshmen and fewer transfer students) then the (fewer) transfer students would be more successful.

This apparent divide between associate's- and bachelor's-degree faculty needs to be bridged for productive intercollege work, such as the construction of more articulation agreements, to occur. One way to start would be to collect and distribute relevant data. Are the transfer students showing a GPA decline across all courses or only in specific courses or not at all? Are there any receiving institution behaviors that could themselves be responsible for any GPA decline? How do students perform at the new institution who are and are not denied credit for a specific prerequisite course taken at the sending institution? Sometimes data do not match subjective impressions (Gentsch et al., 2022).

However, just providing everyone with useful data may not be sufficient. Faculty from different result in changes in how transfer students are prepared and received so that there is satisfactory transfer student success, other actions may be necessary. For example, revisions may be needed in existing incentive structure policies that are rewarding only individual, not joint, college achievement, and that therefore deter colleges and their members from taking actions for other than their own benefit. In such cases, actions taken by a superseding authority may be necessary (for example, see Smith, 2023).

This study has several possible limitations. As is the case for any survey, the responses reflect what the participants chose to tell us about what they perceived. We do not know if the participants' responses accurately reflect their own or others' behavior, or if the participants' responses accurately reflect even their own perceptions of those behaviors. Studies using direct observation of transfer-related behaviors would be needed to assess this possible limitation.

In addition, although the current survey's results were obtained from 607 participants at 19 colleges, far more than the participants and colleges of any previous study of staff and faculty views about transfer, and although the colleges had large differences in their sizes and degree programs, all the colleges are part of the same urban public system of higher education. Thus, the responses obtained in this research may not be representative of other institutions of higher education.

Finally, this study did not inquire about the participants' beliefs or actions or duties concerning nontraditional types of transfer populations, such as students with dual enrollment credits from high school, students with advanced placement credit, or students with prior learning experience. To keep the survey at a length that would result in a high response rate, many useful topics had to be excluded. Such topics are ripe for future research.

Given the significant differences demonstrated here in faculty views across higher education sectors, and given the critical roles that faculty play in transfer, including with regard to transfer credit decisions, a comprehensive survey of faculty views concerning transfer would also be useful future research. Such a survey should include enough faculty to be able to disaggregate the results by faculty characteristics.

In conclusion, this study focused on the reported transfer-related views of 607 staff and faculty who were identified by 19 undergraduate CUNY colleges as having transfer student responsibilities. The findings suggest several areas of challenge for facilitating vertical transfer student success. In particular,

policies and practice may need to ensure that faculty receive increased support in the performance of some transfer-related duties. Further, given the differing views of the faculty in the associate's- and bachelor's-college sectors, policy and practice may need to ensure that faculty receive information and incentives to work together towards a common goal of facilitating vertical transfer student success. Vertical transfer student success is essential for achieving social mobility and equity in higher education.

REFERENCES

- AAUP. (2015). *Policy documents and reports* (11th ed.). American Association of University Professors.
- Bahr, P. R., Toth, C., Thirolf, K., & Massé, J. C. (2013). A review and critique of the literature on community college students' transition processes and outcomes in four-year institutions. In M. B. Paulsen (Ed.), *Higher education: Handbook of theory and research* (Vol.28, pp. 459-511). Springer.
- Bowker, L. (2021). Exploring faculty perspectives on college-to-university transfer in a large Canadian university. *Community College Journal of Research and Practice*, 45(4), 290-306. <https://bit.ly/3QkWKQu>
- Carnevale, A. P., Cheah, B., & Wenzinger, E. (2021). *The college payoff: More education doesn't always mean more earnings*. Georgetown University Center on Education and the Workforce. <https://bit.ly/3KtV1Vx>
- CUNY Office of Human Resources Management (2019). *Staff facts. Fall 2019*. <https://bit.ly/3QjILvp>
- CUNY Office of Institutional Research and Assessment. (2020a, April 11). Total enrollment by undergraduate and graduate level, full-time/part-time attendance, and college: Fall 2018. <https://bit.ly/3rMaFF0>
- CUNY Office of Institutional Research and Assessment. (2020b, August 18). *A profile of undergraduates at CUNY senior and community colleges: Fall 2019*. <https://bit.ly/3LAgGKe>
- DeWine, P. R., Ludvik, M. B., Tucker, M., Mulholland, S., & Bracken, W. (2017). Exploring a successful community college student transition to a research-university environment. *Community College Journal of Research and Practice*, 41(12), 809-822. <https://bit.ly/3rYJc2V>
- Dimino, M. (2020, December 7). College transfer in the COVID-19 era: Expectations vs. reality. *Third Way*. <https://bit.ly/2VSRfLt>
- Elliott, D. C., & Lakin, J. M. (2020). Running the STEM gauntlet: The complicity of four-year universities in the transfer penalty. *Research in Higher Education*, 61, 540-565. <https://bit.ly/3Olnaza>
- Gentsch, K., Truelsch, S., Oka, Y., & Logue, A. W. (2022, August 4). Transfer shock: Reality or myth? <https://bit.ly/3ctHShu>
- Giani, M. S. (2019). The correlates of credit loss: How demographics, pre-transfer academics, and institutions relate to the loss of credits for vertical transfer students. *Research in Higher Education*, 60, 1113-1141. <https://bit.ly/3DCpDA3>
- Hayes, S., Lindeman, L., & Lukszo, C. (2020). The role of academic advisors in the development of transfer student capital. *NACADA Journal*, 40(1), 49-63. <https://bit.ly/3oTZxVs>
- Hills, J. R. (1965). Transfer shock: The academic performance of the junior college transfer. *The Journal of Experimental Education*, 33(3), 201-215.
- Horn, L., & Skomsvold, P. (2011, November). Community college student outcomes: 1994-2009. NCES 2012-253. <https://bit.ly/3qm6YVX>
- Hyatt, S. E., & Smith, D. A. (2020). Faculty perceptions of community college transfer students: The private university experience. *Community College Journal of Research and Practice*, 44(6), 395-411. <https://bit.ly/3Qsk3It>
- Logue, A. W. (2017). *Pathways to reform: Credits and conflict at The City University of New York*. Princeton University Press.
- Logue, A. W., Oka, Y., Wutchiett, D., Gentsch, K., & Abbeyquaye, S. (2022). Possible causes of leaks in the transfer pipeline: Student views at the 19 colleges of The City University of New York.

- Journal of College Student Retention: Research, Theory & Practice*. Advance online publication. <https://bit.ly/3IXSPou>
- Mayhew, M. J., Rockenbach, A. N., Bowman, N. A., Seifert, T. A. D., Wolniak, G. C., Pascarella, E. T., & Terenzini, P. T. (2016). *How college affects students: 21st century evidence that higher education works* (Vol. 3). Jossey-Bass.
- Monaghan, D. B., & Attewell, P. (2015). The community college route to the bachelor's degree. *Educational Evaluation and Policy Analysis*, 37, 70-91. <https://bit.ly/3PohrbB>
- National Center for Education Statistics. (2020, August). *A 2017 follow-up: Six-year persistence and attainment at any institution for 2011-12 first-time postsecondary students*. NCES 2020-238. <https://bit.ly/39UCpyh>
- National Center for Education Statistics. (2021, May). *Characteristics of postsecondary students*. <https://bit.ly/3Ohdjue>
- Packard, B. W.-L., Tuladhar, C., & Lee, J.-S. (2013). Advising in the classroom: How community college STEM faculty support transfer-bound students. *Journal of College Science Teaching*, 42(4), 14-20.
- Payne, B. K., Vandecar-Burdin, T., & Cigularova, D. (2022). Attitudes about cybersecurity articulation agreements and transfer students: A Statewide survey of faculty members and advisors. *NACADA*, 42(2). <https://bit.ly/3rW2kik>
- Scheld, J. (2023). The path to a bachelor's degree: The effect of starting at a community college. *Journal of Higher Education Theory and Practice*, 23(8), 164-213
- Schudde, L., Bradley, D. & Absher, C. (2020). Navigating vertical transfer online: Access to and usefulness of transfer information on community college websites. *Community College Review*, 48(1), 3-30. <https://bit.ly/3Mhe6ZQ>
- Schudde L., & Brown, R. S. 2019. "Understanding Variation in Estimates of Diversionary Effects of Community College Entrance: A Systematic Review and Meta-Analysis." *Sociology of Education* 93(3):247–68. <https://bit.ly/45eoKcX>
- Schudde, L., Jabbar, H., & Hartman, C. (2021). How political and ecological contexts shape community college transfer. *Sociology of Education*, 94(1), 65-83. <https://bit.ly/3MiTQqP>
- Senie, K. C. (2016). Implementing transfer and articulation: A case study of community colleges and state universities. *Community College Journal of Research and Practice*, 40(4), 269-284. <https://bit.ly/3rVa7wV>
- Shapiro, D., Dundar, A., Huie, F., Wakhungu, P.K., Bhimdiwali, A., Nathan, A., & Youngsik, H. (2018, July). *Transfer and mobility: A national view of student movement in postsecondary institutions, fall 2011 cohort (Signature report no. 15)*. National Student Clearinghouse Research Center. <https://bit.ly/37KsavN>
- Shapiro, D., Dundar, A., Huie, F., Wakhungu, P., Yuan, X., Nathan, A. & Hwang, Y. (2020, September 29). *Tracking transfer: Measures of effectiveness in helping community college students to complete bachelor's degrees*. National Student Clearinghouse Research Center. <https://bit.ly/2HLn2dL>
- Smith, A. A. (2023, May 17). Despite decades of calls to action, California community college students face roadblocks to transfer. *EdSource*. <https://bit.ly/42NulGl>
- Sutcliffe, S., Knox, D., & Dorimé-Williams, M. (2023, March 16). Faculty and credit transfer. *Inside Higher Ed*. <https://bit.ly/43TVyH3>
- Taylor, J. L., & Jain, D. (2017). The multiple dimensions of transfer: Examining the transfer function in American Higher Education. *Community College Review*, 45(4), 273-293. <https://bit.ly/43LCEC8>
- Taylor, Z. W. (2019). Inarticulate transfer: Do community college students understand articulation agreements? *Community College Journal of Research and Practice*, 43(1), 65-69. <https://bit.ly/43M5Vg9>
- Tibshirani, R. (1996). Regression shrinkage and selection via the lasso. *Journal of the Royal Statistical Society: Series B (Methodological)*, 58(1), 267-288. <https://bit.ly/3qecdax>

- Tobolowsky, B. F., & Cox, B. E. (2012). Rationalizing neglect: An institutional response to transfer students. *The Journal of Higher Education*, 83(3), 389-410. <https://bit.ly/3qf81Y1>
- Wang, X. (n.d.). Main barriers transfer (-intending) students experience & overcome. National Institute for the Study of Transfer Students. <https://bit.ly/47ihXAT>
- Wang, X. (2020, April 23). Colleges should cultivate more equitable transfer pathways. *Inside Higher Ed*. <https://bit.ly/47cBG4R>
- Whinnery, E., and Peisach, L. (2022, July 28). *50-state comparison: Transfer and articulation policies*. Education Commission of the States. <https://bit.ly/3DNId8F>
- Witteveen, D., & Attewell, P. (2020). The vertical transfer penalty among bachelor's degree graduates. *Journal of Higher Education*, 91(1), 32-57. <https://bit.ly/3OCcGg8>

APPENDIX

Author Notes, Acknowledgments, Compliance With Ethical Standards, and Declarations

Portions of this research were presented at the 2020 annual meeting of the National Institute for the Study of Transfer Students, Atlanta, Georgia. This study was funded by The City University of New York, and by Grant R305A180139–19 from the Institute of Education Sciences (IES) of the Department of Education (the contents of this paper do not necessarily represent the policy of the Department of Education, and endorsement by the Federal Government should not be assumed). For contributions to all stages of the research we thank many members of The City University of New York's (CUNY's) Office of Applied Research, Evaluation, and Data Analytics, especially C. Chellman and Z. Tang; B. Condliffe, S. Sutcliffe, and M. Weiss of MDRC; and the many members of CUNY's Transfer Opportunity Project, especially J. Fink and V. Rabinowitz. We also thank N. Bellettiere, M. Townsell, S. Shrank, R. Torres, and N. Yoo for assistance with the data analysis; N. Bellettiere for figure preparation; K. M. King-Anderson and S. Sivasingam of CUNY's Office of Human Resources Management for demographic information; and the many CUNY college leaders who assisted with recruitment of participants, as well as thanking the participants themselves. CUNY's Institutional Review Board approved all aspects of participant recruitment and treatment prior to the start of the research (IRB File #2018-1223). All participants gave informed consent. We have no known conflicts of interest to disclose. The dataset is available at <https://bit.ly/454AJcT>.