

COLUMBIA UNIVERSITY

Enhancing Intercampus Communication and Supporting Interdisciplinary Interactions

Report and Recommendations on the Intercampus Shuttle Service by the Education Committee of the Columbia University Senate

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The Critical Role of Intercampus Transportation in Research and Education at Columbia University

Columbia University consists of two large campuses, the Morningside campus and the Medical Center (CUMC). While they are physically separated by approximately 2.8 miles, interactions between the two campuses have significant implications for the University's educational and research missions.

As President Lee Bollinger pointed out in his 2002 inaugural address, "a great university will figure out how to deal with one of the most important questions of higher education, namely how to bridge the intellectual strengths of the health sciences and professions and the fundamental science disciplines in Arts and Sciences – represented physically for us by the two campuses of Washington Heights and Morningside Heights."

To promote such interdisciplinary interactions, a convenient and reliable intercampus transportation system is of paramount importance.

CUMC is the primary work and study site for 684 Columbia graduate students and 2,726 professional school students (638 medical students, 300 dental students, 678 nursing students, and 1,110 public health students). To assess the needs for and satisfaction of graduate and professional school student with the intercampus bus service, we conducted a survey of these students in January/ February with respect to the following questions:

- Reasons for traveling to the Morningside Campus.
- Frequency with which students need to go to the Morningside Campus.
- Usefulness of the inter-campus bus service.
- Disincentives for using/dissatisfaction with the inter-campus bus service.

Four hundred and ten students responded to the survey (83 graduate students, 162 medical students, 59 dental students, 68 nursing students, and 38 public health students).

With respect to the first question, reasons for traveling to the Morningside Campus:

- 4% of the respondents indicated a need to travel for classes
- 23% need to go to the Morningside Campus for seminars
- 72% of respondents travel to Morningside to use the library
- 26% do so to participate in student activities

A significant number of respondents also travel to Morningside for career service, research collaborations as well as social events. (Figure 1)

When asked how often they need to go to the Morningside Campus:

- 31% of respondents said at least 3-4 times per week.
- An additional 22% of students indicated a need to travel to the other campus 1-2 times per week. (Figure 2)

As suggested by the survey results, students from CUMC need to go to the other campus fairly often and largely for academic purposes. **Supporting a reliable and functional intercampus shuttle service is in complete alignment with the academic mission of Columbia University and plays an important role in enhancing collaboration between health science disciplines at CUMC and fundamental science disciplines in Arts and Sciences at Morningside Campus.**

Figure 1. Reasons for traveling to the Morningside Campus

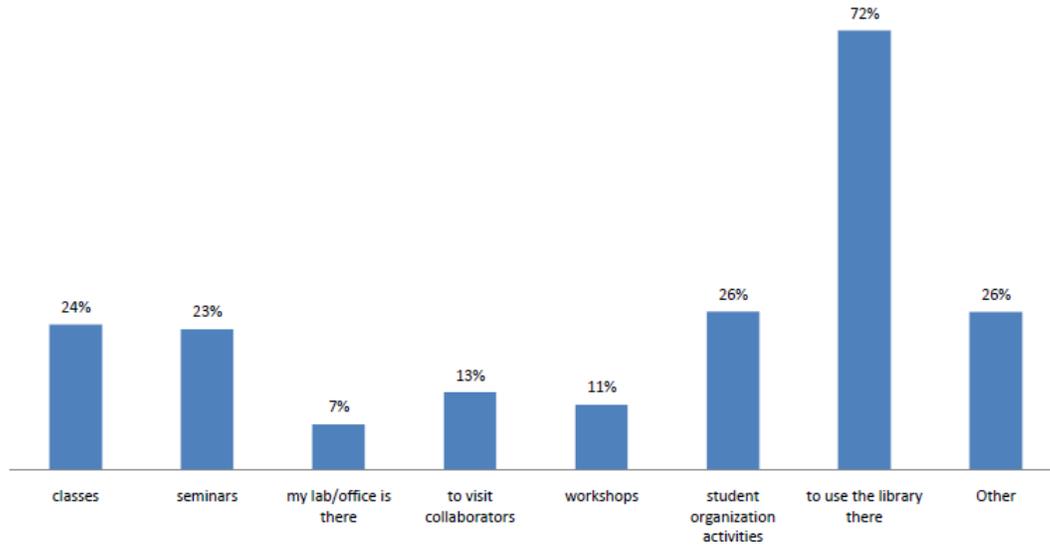
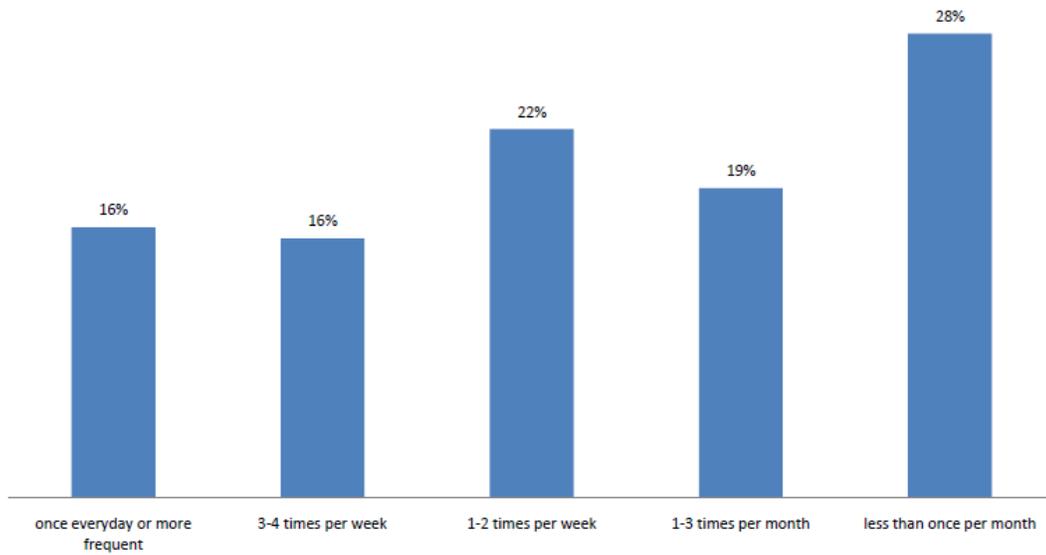


Figure 2. How often do you need to go to the Morningside Campus?



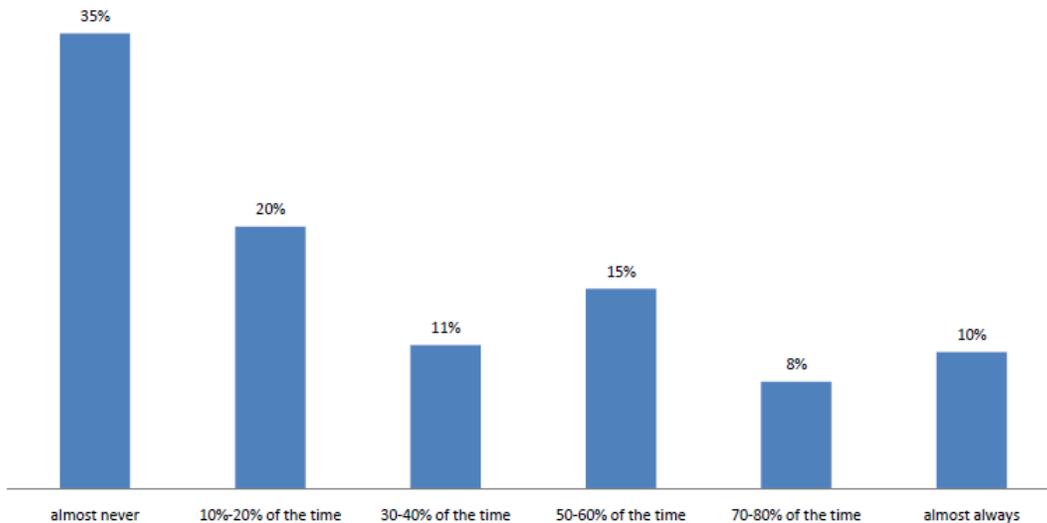
Review of the quality of the current intercampus shuttle service

While the subway station at 168th street has always been questioned by the CUMC community for its sanitary conditions and safety issues regarding the elevators, the subway fare costs \$4.50 for a round trip between the two campuses. For students who need to go to the other campus for classes or seminars, the financial obstacle became apparent over time (annualized at \$500-\$1,000 per year), presenting a significant challenge to encourage academic exchange between the two campuses.

Since the intercampus shuttle service is made free to all Columbia students, CUMC students heavily rely on the shuttle to reach to the Morningside campus. However, it has come to the attention of the Education Committee that the frequency and quality of the shuttle service does not meet the needs of the students.

The same survey mentioned above showed that as high as 35% of the respondents find the shuttle “almost never” useful when they need to go to Morningside, and 20% of the students find the shuttle only useful for 10%-20% of the time. Eleven percent of the students manage to use it 30%-40% of the time. (Fig 3)

Figure 3. How often do you find the inter-campus shuttle useful when you need to go to the Morningside campus?



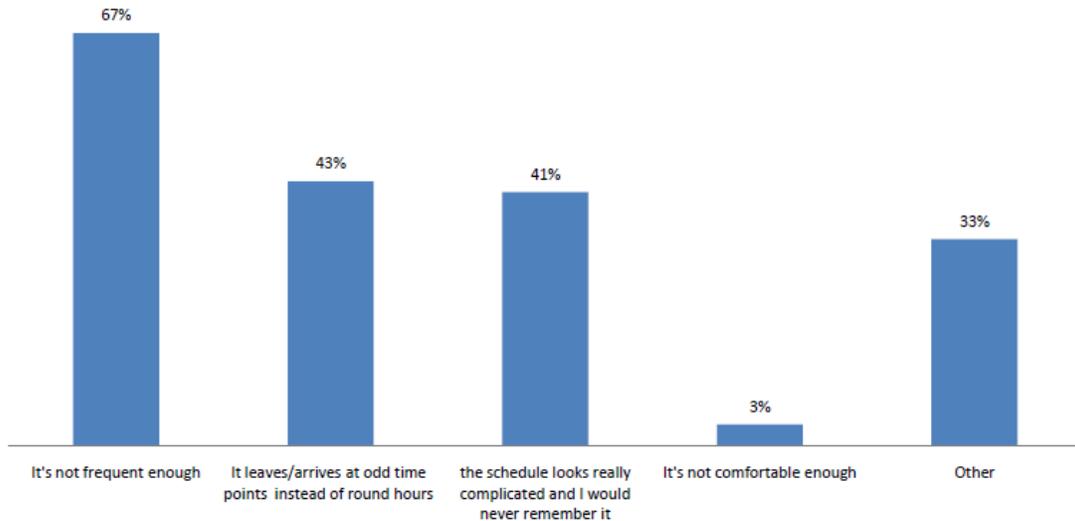
When asked what the main issues of the shuttle service are, and the students reported the following results:

- 67% of the respondents reported that the shuttle is not frequent enough.
- 42% of students complained that the schedule lacks regular intervals
- 41% reported that the schedule is too complicated.

An irregular schedule makes it difficult to remember when there will be a convenient bus. (Figure 4, for the current shuttle schedule, see Exhibit 1) The variations in routes taken

by the buses at different times of the day resulted in some bus trips taking up to 40 minutes. Students also complained about lack of shelters at the shuttle stops, failure of buses to stay on schedule, and that the CUMC bus stop is distant from the center of the CUMC campus where most teaching and research buildings are located.

Figure 4. What prevented you from using the shuttle service more often?



The survey was conducted at each of the five schools at CUMC individually, and data were compiled to represent all CUMC population since the distributions between all the options follow similar patterns. However, the data from each school presented separately can be found in Exhibit 2 at the end of the report.

In summary, the main complaints over the shuttle service from CUMC students are that it is not frequent enough and that the schedule is not regular enough for ease of memorizing and time management.

Suggestions for Improvement of the Intercampus Shuttle Service

The survey results strongly suggest that to meet the needs of the majority of CUMC the shuttle service should:

- Run more frequently.
- Have a regular schedule.
- Employ direct routes between campuses to keep travel time to a minimum.
- Arrive at CUMC and at Morningside ten minutes before the hour.
- The CUMC bust stop should be relocated to 168th street and Fort Washington

Based on this feedback, the Education Committee further investigated the schedule and suggested a revised schedule. (Exhibit 3. Education Committee Suggested Schedule). The revised schedule reflects the following changes:

- Bus A will travel directly from CUMC to 116th Street, making no stops in between, and the trip will take about 20min based on the current schedule; the bus will then go to 96th Street first and then come back to CUMC while making stops at Harlem Hospital (HH), A train stop at 124th Street (A train), SW corner of 133rd Street and Broadway (Nash), 3187 Broadway (McD's). This return trip will take about 40 min.
- Bus B will travel directly from 116th Street to CUMC, making no stops in between, and the trip will take about 20min; the bus will then go all the way to 96th Street while making stops at HH, A train, Nash, McD's and come back to 116th Street, taking about 40min.
- This schedule enables students going from:
 - A. CUMC to Morningside (116th St.) to leave CUMC at 25 min after the hour and arrive at Morningside 15 min before the hour,
 - B. Morningside (116th Street) to CUMC to leave Morningside at 25 min after the hour and arrive at CUMC 15 min before the hour.

Either way, the trip between Morningside Campus and CUMC will take 20 min. We configured the schedule this way because most students who need the shuttle use it to attend classes and seminars which usually start on the hour. We suggest the buses arrive 15 min before the hour so that students have ample time to walk to their classrooms from the bus stop.

- Buses that depart CUMC or Morningside 10 minutes before each hour make intermediate stops at HH, A train stop at 124th Street, SW corner of 133rd Street and Broadway (Nash), 3187 Broadway (McD's) and 96th Street.
- Individuals traveling from HH, A train stop at 124th Street, SW corner of 133rd Street and Broadway (Nash), 3187 Broadway (McD's), and 96th Street to either 116th Street or CUMC will have at most a 20 min trip.
- Most importantly, the schedule is regular. Buses leave CUMC and 116th Street at either 25min or 45min after each hour throughout the day and travel between CUMC and 116th Street takes no more than 20 min.
- The proposed evening schedule increases the frequency of buses between 6pm - 7pm. The current schedule leaves a long gap during this time when most students who live near one campus but conduct research on the other campus need to commute home.

Overall, we consider the suggested schedule a significant improvement over the current schedule and will address most of the students' concerns regarding the service.

We recommend that the Transportation Office consider this model with accommodation for other personnel who need the shuttle service at Columbia University.

However, we are cognizant that the University Senate is not necessarily the appropriate forum for operational changes. Therefore, we consider this model as a template for initiating a discussion, as it presents our conception of a possible solution.

Other changes that we recommend include:

- Building shelters to accommodate students waiting for the bus during inconvenient weather;
- Having a direct channel for filing complaints when the bus is significantly behind schedule or missing the stop entirely;
- Moving the CUMC stop closer to the center of the campus, e.g. in front of Bard Hall, Milstein Hospital or Children's Hospital instead of East side of Broadway, which is quite far from most research buildings and even further away from resident buildings.

Exhibit 1. Current Intercampus Shuttle Schedule

INTERCAMPUS SHUTTLE SCHEDULE													Effective January 4 - May 20, 2011		
	HEADING DOWNTOWN					HEADING UPTOWN									
	CUMC	Nash S	Stud S	Prentis	A Train	120 N	EC	Stud N	Nash N	CUMC*	HH	CUMC			
AM										6:30	6:43	6:56			
										6:56	7:09	7:22			
			7:30	7:31	7:37			7:42	7:45	7:46	7:47		8:00		
	7:22	7:32	7:36	7:37	7:43			7:47	7:50	7:51	7:52	8:05	8:18		
	8:00	8:10	8:14	8:15	8:21			8:26	8:29	8:30	8:31		8:45		
		8:32	8:33	8:39			8:43	8:46							
	8:45	8:55	8:59	9:00	9:06			9:11	9:14	9:15	9:16		9:30		
	CUMC	Nash S	Stud S	Prentis	McD's	116 S	96	116 N	EC	Stud N	Nash N	CUMC*	HH	CUMC	
Midday	9:30	9:40	9:44	9:45	—	—	—	9:52	9:55	9:56	9:57	9:27	9:40	10:10	
			9:54	9:55	9:56	10:00	10:05	10:15							
	10:10	10:20	10:24	10:25	—	—	—	10:32	10:35	10:36	10:37			10:50	
								10:50	10:53	10:54	10:55	11:08	11:21	11:34	
	10:50	11:00	11:04	11:05	—	—	—	11:12	11:15	11:16	11:17			11:30	
	11:34	11:42	11:47	11:48	11:49	11:53	11:58	12:08	12:11	12:12	12:13			12:26	
	12:05	12:15	12:19	12:20	—	—	—	12:27	12:30	12:31	12:32			12:45	
	12:26	12:34	12:39	12:40	12:41	12:45	12:49	12:59	1:02	1:03	1:04	1:17	1:30	1:43	
	12:45	12:55	12:59	1:00	—	—	—	1:07	1:10	1:11	1:12			1:25	
	1:25	1:35	1:39	1:40	—	—	—	1:47	1:50	1:51	1:52			2:05	
	1:43	1:51	1:56	1:57	1:58	2:02	2:07	2:17	2:20	2:21	2:22	2:35	2:48	3:01	
	2:05	2:15	2:19	2:20	—	—	—	2:27	2:30	2:31	2:32			2:45	
	2:45	2:55	2:59	3:00	—	—	—	3:07	3:10	3:11	3:12			3:27	
3:01	3:09	3:14	3:15	3:16	3:20	3:25	3:35								
3:27	3:37	3:41	3:42	—	—	—	3:49	3:52	3:53	3:54			4:07		
							4:10	4:13	4:14	4:15	4:28	4:41	4:54		
	CUMC	Nash S	Stud S	Prentis	A Train			120 N	EC	Stud N	Nash N	CUMC*	HH	CUMC	
Early PM	4:07	4:17	4:21	4:22	4:26			4:32	4:36	4:37	4:38			4:52	
	4:54	5:02	5:07	5:08	5:13			5:17	5:21	5:22	5:23	5:36	5:49	6:02	
	5:36	5:46	5:50	5:51	5:55			6:01	6:04	6:05	6:06			6:19	
												6:02	6:15	6:30	
	6:19	6:29	6:33	6:34	6:38			6:44	6:47	6:48	6:49			7:01	

STOP LOCATIONS

Heading Downtown

- CUMC: NE Corner of 166th St. and St. Nicholas Avenue
- Nash S: SW corner of 133rd St. and Broadway
- Stud S: 615 W. 131st St. (Studebaker Building)
- Prentis: 632 W. 125th St.
- McD's: 3187 Broadway (btw W. 125th St. and Tiemann Place)
- A Train: Hancock Pl/124th St. and Manhattan Ave. (A, B, C, D trains) (rush-hour only)
- 116 S: NW corner of 116th St. and Broadway (midday only)

Heading Uptown

- 96: 2542 Broadway, (NE corner of 95 St. and Broadway)
- 116 N: NE corner of 116th St. and Broadway (midday only)
- 120: 525 W. 120th St. btwn. Broadway and Amsterdam (Teachers College) (rush-hour only)
- EC: Employment Center, 3180 Broadway (btwn. 124th and 125th Sts.)
- Stud N: SE corner of 131st St. and Broadway
- Nash N: SE corner of 133rd St. and Broadway
- CUMC* to HH: SE Corner of 167th St. and St. Nicholas Avenue
- Harlem Hospital: Lenox Ave. between 135th St. and 136th St.

NOTES

- The Intercampus Shuttle runs Monday through Friday, excluding University holidays.
- Seating is available on a first-come, first-served basis.
- All riders must present a valid University ID upon boarding the Shuttle.
- Please keep in mind that shuttle times are approximate and are subject to traffic.
- With at least 24-hours advance notice, the Transportation Office can provide wheelchair-accessible transportation service on most Shuttle routes. Please call 212-854-3382.

	CUMC	116	HH	CUMC
Late PM	7:36	7:49	8:02	8:15
	8:15	8:29	8:43	8:56
	8:56	9:09	—	9:23
	9:23	9:36	—	9:50
	9:50	10:03	10:17	10:30
	10:30	10:44	—	10:58
Early AM	10:58	11:12	—	11:26
	11:26	11:39	11:53	12:06
	12:06	12:19	—	12:33
	12:33	12:46	—	12:59

KEY

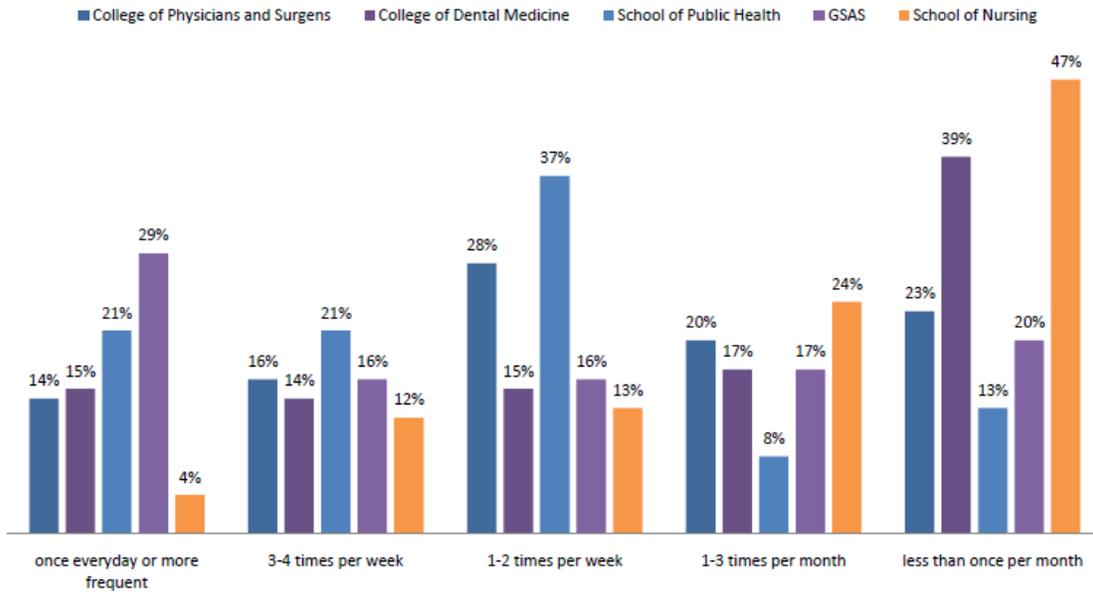
Two shuttle buses operate on this route.

Green	Harlem Shuttle
White	Morningside Shuttle
Grey	No service
Red	Drop-off only; no boarding
<i>Italic</i>	Soft stop; Shuttle stops at passenger's request or if a passenger is waiting at stop
—	Skipped stop

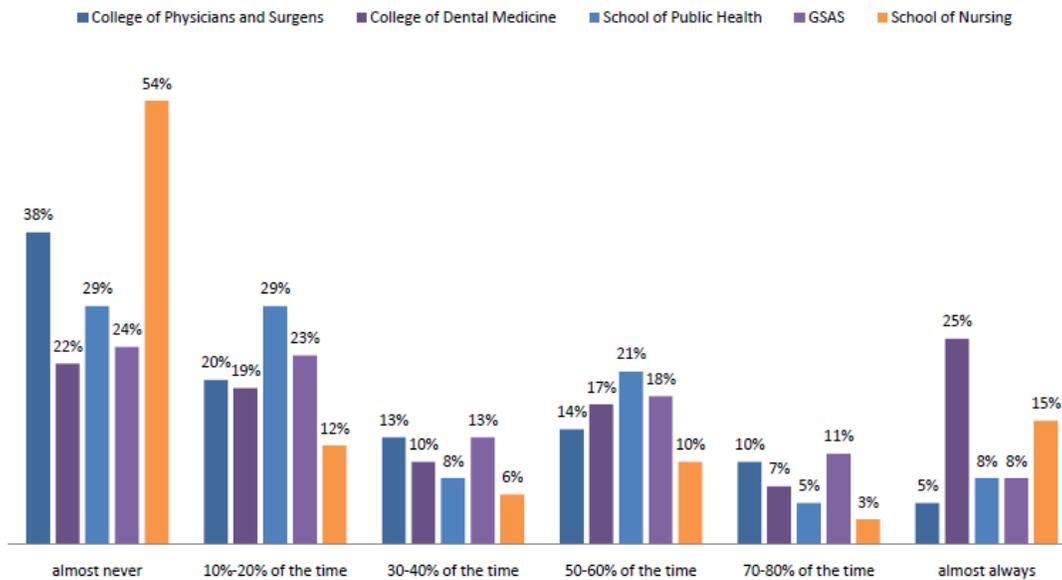
For more information about shuttle services visit www.columbia.edu/cu/transportation.

Exhibit 2. Survey Results Presented for Each School at CUMC

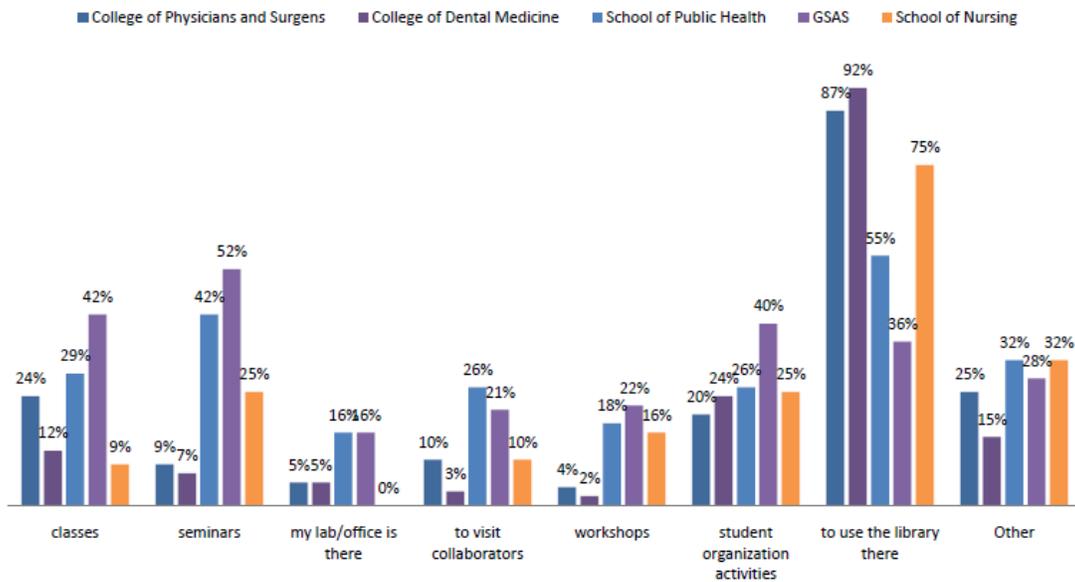
How often do you need to go to the Morningside Campus?



How often do you find the inter-campus shuttle useful when you need to go to the Morningside campus?



What do you need to go to the Morningside campus for?



What have been preventing you from using the shuttle service more often?

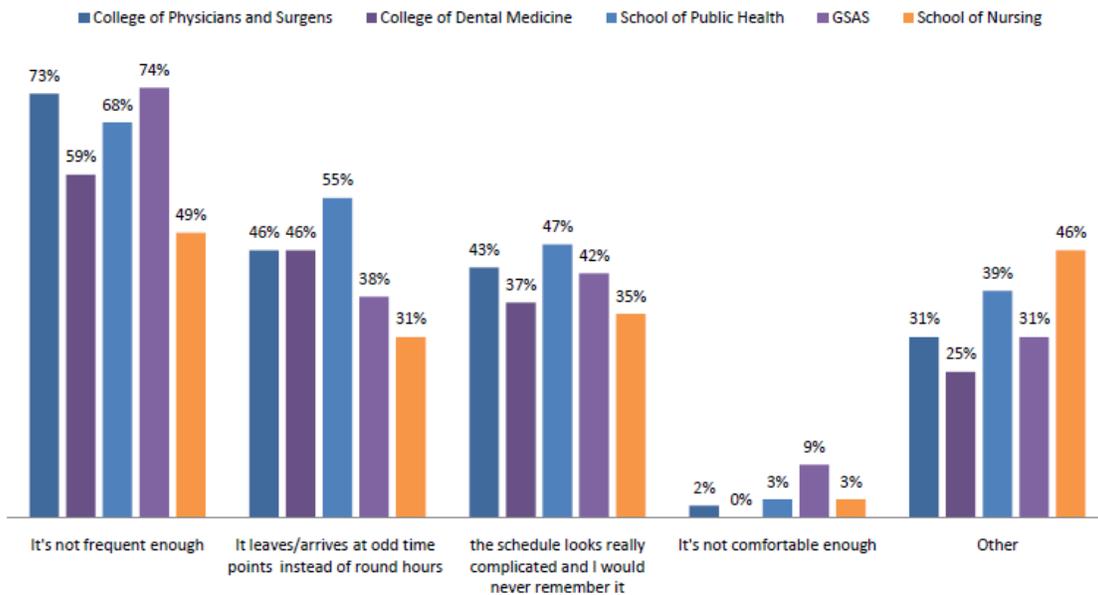


Exhibit 3. Education Committee Suggested Schedule

red	Bus A
blue	Bus B
HH	Harlem Hospital
Nash	SW corner of 133rd St. and Broadway
McD's	3187 Broadway (btw. W 125th St. and Tiemann Place)
A Train	Hancock Pl./124th St. and Manhattan Ave. (A,B,C,D)
96th	NE corner of 95th St, and Broadway

Bus A & Bus B

Leave		Arrive/Leave		Arrive
116th St	HH, A train, Nash, McD's, 96th St	CUMC	HH, A train, Nash, McD's, 96th St	116th St
		7:25 a.m.	NO STOP	7:45 a.m.
7:25 a.m.	NO STOP	7:45 a.m.	STOP	8:25 a.m.
7:45 a.m.	STOP	8:25 a.m.	NO STOP	8:45 a.m.
8:25 a.m.	NO STOP	8:45 a.m.	STOP	9:25 a.m.
8:45 a.m.	STOP	9:25 a.m.	NO STOP	9:45 a.m.
9:25 a.m.	NO STOP	9:45 a.m.	STOP	10:25 a.m.
9:45 a.m.	STOP	10:25 a.m.	NO STOP	10:45 a.m.
10:25 a.m.	NO STOP	10:45 a.m.	STOP	11:25 a.m.
10:45 a.m.	STOP	11:25 a.m.	NO STOP	11:45 a.m.
11:25 a.m.	NO STOP	11:45 a.m.	STOP	12:25 p.m.
11:45 a.m.	STOP	12:25 p.m.	NO STOP	12:45 p.m.
12:25 p.m.	NO STOP	12:45p.m.	STOP	1:25 p.m.
12:45 p.m.	STOP	1:25 p.m.	NO STOP	1:45 p.m.
1:25 p.m.	NO STOP	1:45p.m.	STOP	2:25 p.m.
1:45 p.m.	STOP	2:25 p.m.	NO STOP	2:45 p.m.
2:25 p.m.	NO STOP	2:45p.m.	STOP	3:25 p.m.
2:45 p.m.	STOP	3:25 p.m.	NO STOP	3:45 p.m.
3:25 p.m.	NO STOP	3:45p.m.	STOP	4:25 p.m.
3:45 p.m.	STOP	4:25 p.m.	NO STOP	4:45 p.m.
4:25 p.m.	NO STOP	4:45p.m.	STOP	5:25 p.m.
4:45 p.m.	STOP	5:25 p.m.	NO STOP	5:45 p.m.

Evening Schedule

Leave		Arrive/Leave		Arrive
CUMC	HH, Nash, McD's,	116th St	HH, A train, Nash, McD's,	CPMC
		6 p.m.	STOP	6:40 p.m.
6 p.m.	STOP	6:30 p.m.	STOP	7:10 p.m.
6:40 p.m.	STOP	7:10 p.m.		