

Catchment Area Geographies and the Geosciences in CUNY

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Research has show that urban students from underrepresented populations often begin their higher education experience at community colleges, giving light to the pipeline model for diversifying higher education. Partnerships to move students from local community colleges to senior colleges develop, but often the pipeline relationships fail to take into account sociospatial constraints the students may be facing. It is often difficult for these students to leave the areas they are from. Even leaving the neighborhood to travel cross-town to a senior college in the same city may be a significant challenge. As has been proposed by the ALIGNED project, a more accurate model for the college selection decisions of such students may be catchment areas. They are most likely to begin at the community college in closest proximity to their home, and if they transfer, their sociospatial contexts are likely to influence how far from home they will travel.

Additionally, once in a community college, these students take courses that will fulfill requirements to complete the AA/AS/AAS degree. Exposure to STEM fields usually comes in the form of completing a general education requirement. Thus exposure to particular STEM fields is controlled by whether the selected community college offers such a course. The geosciences tend to be “discovery” majors—students tend to select the geosciences (geography, geology, environmental science/studies) as majors after taking an introductory course that fulfills a general

education requirement. Thus a student from an underrepresented population who begins his/her college career at the nearest community college will most likely only choose to major in a geoscience field if he/she is exposed to the subject at the initial community college.

The purpose of this proposed project is to test the hypotheses that students select a community college based on proximity to residence in selecting a college, and exposure to the geosciences for urban commuter students from underrepresented populations through general education courses is what causes them to “discover” the major. The largest pools of such students are in major metropolitan areas, and these also tend to have both community colleges and senior colleges accessible to commuters. The project will focus on the largest city, New York, and on the largest commuter public university system, the City University of New York. The system has nearly 300,000 students at 7 community colleges, 11 senior colleges, and 5 professional schools, and an honors college, all within the city limits, and for the most part, accessible by public transportation.

The project will link online surveys with GIS. I will select a set of community colleges that offer geoscience courses as an option within the general education requirement. I will also select senior colleges where a student can major in one or more of the geosciences. I will conduct two online surveys—one of each level of college. Students in general education science courses at community colleges will be invited to respond to an online survey that asks questions concerning why they

selected the college they are attending as well as zip code of residence, and will be asked questions concerning their selection of the course through which they were invited to respond, and their intended majors. Students who are majoring in the geosciences at senior colleges will be asked what led them to become a major, whether they attended a community college in CUNY or elsewhere, and zip code of residence. All students will be asked a set of demographic questions as well. Using GIS and the zip code information, I hope to capture how far students are traveling to college. This will be supplemented by information concerning why they chose the campus they are attending. The CUNY application process allows students to apply for 6 campuses for a flat rate of \$65. Thus many students are accepted at more than one school.

This could give a picture of catchment areas of different campuses within the CUNY system. This could then be disaggregated by intended or declared major and a student's race/ethnicity. This can lead to informed discussions of partnerships between community and senior colleges, development of geography and/or environmental science courses on campuses currently without such courses, campus visits to high schools in particular neighborhoods, and other such actions. The better understanding we have of the geographies of this process, the more we can focus our efforts, particularly in this era of shrinking resources.

While location relative to public transportation options does play a known role in campus selection in CUNY, testing the relationship between where community

colleges are located and where their students live can be replicated in other urban commuter systems across the US. The better we understand the role that spatial dynamics plays in the college decision-making process of urban students from underrepresented populations, the better we can effectively plan efficacious recruitment and retention strategies, particularly for discovery majors such as the geosciences.