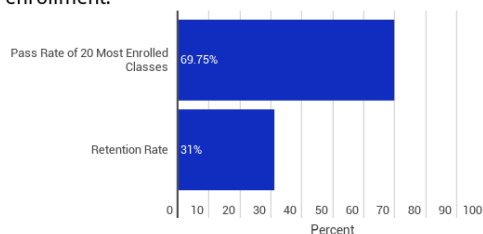
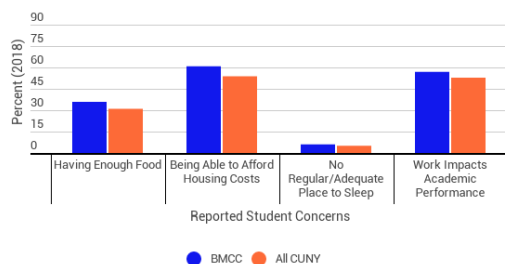


Introduction

For low-income populations figuring out how to pay for basic necessities like food and housing can supersede the desire to attain a higher level of education. As evidenced by low retention rates, the difficult decision to forgo a university education may not be a question of academic ability, but rather economic stability. At BMCC the average pass rate of the top 20 courses by enrollment in 2018 was 69.75%. The average rate of retention was 31% in 2017 for two years of enrollment.



It is possible that the high pass rate of the top 20 classes combined with the low retention rate may be due to economic factors. Additionally, in 2018, 61% of BMCC students worried about being able to afford the cost of housing at least "sometimes" while 57% claimed that their time spent working negatively impacted their academic performance.



Further, retention in the sciences proves to be significantly reduced from the school's average, at 19.04%. Evidence shows that underrepresented populations are given fewer resources for advancement, such as research and mentorship opportunities.

RETHINKING TRADITIONAL SCIENTIFIC PEDAGOGY AND RETENTION OF UNDERREPRESENTED POPULATIONS IN POST-SECONDARY EDUCATION

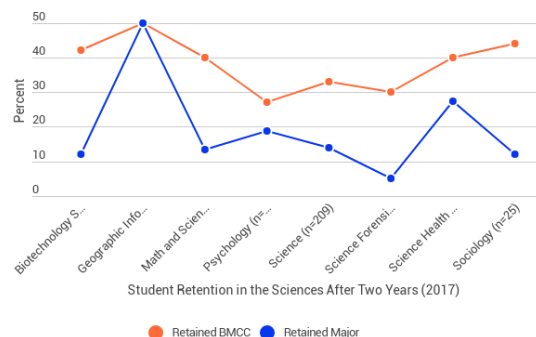
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Project Overview

To improve the retention of students in the sciences, I am exploring the development of a program intended to address the issues of housing and food insecurity, as well as low representation of underrepresented students in the sciences. Undergraduate-level scientific pedagogy focuses on content memorization in a lecture format; I would expand upon this with two main features to propose a model that would be rid of "weed-out" classes, and fully integrate students in scientific study while providing housing and food stability through a live/work urban farming collective. Students in the program would be given free or subsidized food and housing in exchange for their work on the rooftop farm.

Method

Preliminary analysis of data from the 2020 BMCC Enrollment, Retention, and Completion Report, and 2017-2018 BMCC Student Surveys, in addition to studies that discuss the experiences of minority and under-served populations in the sciences.



Discussions

Students from underrepresented populations are less likely to be offered research opportunities prior to applying to a doctoral program than their peers who identify as white and male (Milkman, Akinola, and Chugh, 2014.) The first feature of this expanded pedagogy confronts the lack of research opportunities by weighting the importance of collaboration between students and faculty much heavier. This model would introduce a cohort of students from disadvantaged backgrounds to urban farming through a live/work program, with the intention of providing opportunities for long-term research and data collection.

Additionally, student-faculty ties in community colleges tend to be weaker (Chang, 2005) than in four-year universities. However, strong mentorship with faculty members is shown to ensure "the persistence of women and minority students in science." (Aikens, Robertson, et al, 2017.) Students will work closely with assigned faculty mentors to produce and optimize their rooftop farm, but also to develop meaningful research. This, in turn, will see the development of closer student-faculty ties.

The second feature is lifelong self-sufficiency through urban rooftop farming. With arable land per person shrinking at a steady rate, urban agriculture may become a vital part of the local economy (qt Miccoli, Finucci, and Murro, 2015.) Students will learn how to sustainably produce their own food, while establishing invaluable skills pertaining to self-sufficient food production.

Data Sources

*Please contact me for a list of additional sources:
ashley.donegan94@bmcc.cuny.edu

Office of Institutional Effectiveness and Analytics, 2020, *Enrollment, Retention, and Completion Report BMCC*.

"Student Experience Survey," Tableau Public, 2018, public.tableau.com/profile/oira.cuny#/viz/home/2018StudentExperienceSurvey/CoverPage.