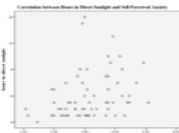


Survey Assessing Green Space Exposure and Self-Perceived Anxiety

Green spaces are plots of undeveloped land surrounding places of residential or industrial areas that are maintained for recreational enjoyment. City parks, green urban landscapes, and rooftop gardens are some examples of green spaces. Is there a correlation between a person's exposure in green spaces and self-perceived anxiety? Students in the Sophomore Science Research class at Brooklyn Academy of Science and the Environment (BASE) investigated this question by constructing survey questions to assess measures of green space exposure and self-perceived anxiety. Administered surveys to freshman students, and learned how to analyze the data using SPSS. Pearson r and regression analyses indicated that there was a positive correlation between green space exposure and anxiety; specifically, that increased exposure to direct sunlight and more time in green spaces tended to slightly increase self-perceived anxiety. Although one could hypothesize that green space exposure should reduce anxiety, students in the research class surmised that the winter season could account for these data. Perhaps spending more time in direct sunlight and in green spaces in the winter also means spending time in cold air, which may slightly increase anxiety. Furthermore, green spaces in the winter are not "green" at all, since many trees are bare, and flowers and plants die in the winter. Therefore, cold weather and less "greenery" in the environment are some factors that could explain this slight increase of self-perceived anxiety in the participants in this sample.



Abstract

Brooklyn College GK-12 Fellows, students, and teachers collaborate on field-based experiments in New York City public high schools. The projects expose students to exciting science experiences using the diverse environments throughout the five boroughs. Many students rarely explore beyond their own neighborhoods; these projects provide students with an expanded knowledge of their city. The projects create a full picture of the urban environment by having students collect and analyze air, water, and soil data as well as assessing the correlations between green space exposure and perceived anxiety levels. A unique feature of our program is our established relationships among schools through project collaborations. This allows the broadening of our datasets as multiple schools compile common field data, for example, on tree measurements and water quality. Students present their findings to their peers and community, fostering a local awareness of environmental conditions. Through interaction with GK-12 Fellows, students are also encouraged to set future academic goals.

Urban Water Quality Analysis and Marine Ecosystem Survey



The Academy of Urban Planning (AUP) and Brooklyn Academy of Science and the Environment (BASE) high schools conducted a water quality field study across the five boroughs of New York City during Fall 2011. The objectives of the study were to learn about the local water bodies, field techniques and to draw connections between the environment and water quality. Students tested basic water quality (see below) and utilized this data to understand the impact the water quality parameters have on each other, as well as the relationship between regional factors such as weather and geography. Additionally, seining and plankton tows were conducted in coastal and estuarine environments to characterize the micro and macro faunal populations

- Acidity
- Alkalinity
- Ammonia
- Carbon Dioxide
- Coliform
- Copper
- Dissolved Oxygen
- Nitrate
- Nitrite
- pH
- Phosphate
- Salinity
- Temperature
- Turbidity



Tree Study: Community, Compensation & the Carbon Footprint

Students investigated the relationship between carbon footprints of trees and emissions produced by local residents and vehicular traffic on residential and commercial roads within the vicinity of their school. In the field, students worked in groups to measure the circumference and apparent height of the tree and mapped each tree location. They also developed and implemented a survey to use in the field in order to categorize car types and their relative carbon emissions. Students compiled their data by using techniques learned in lessons taught by the Fellows; these included mapping skills, data organization and unit conversions. Through the collaboration between Teachers Preparatory High School (TPS) and It Takes a Village Academy (ITAVA), students have the opportunity to compare and expand their datasets.



Benefits to "City as Lab" Fellows and Teachers

Teachers receive assistance in science curricula planning and implementation. The materials developed by the Fellows are accessible online to all participating schools, providing a framework to sustain these projects after the GK-12 program ends. Graduate Fellows gain experience with new pedagogical methods and mentoring skills. In addition, Fellows participate in professional development workshops, including grant writing, presentation and communication skills, and responsible conduct of research. In the participating schools, GK-12 Fellows have taken leadership roles in the integration of active learning techniques into science curricula.

Acknowledgements

PIs and Staff: Louise Hainline, Micha Tomkiewicz, Michelle O'Dea
Participating Teachers: Julius Buh-Mbi, Susannah Ceraldi, Amy DeFelicce, David Johnston, Marjani Parker, Wendell Pressor
Brooklyn College GK-12 'City-as-Lab' is funded by the National Science Foundation through GK-12 grant 0638718.
www.bc-gk12.org

