

PRE-G3: THE ELSEVIER FOUNDATION DATA ANALYTICS PREPARATORY PROGRAM

Women hold just 26% of data science-related jobs and minority women have an even less advantageous employment outlook, according to a 2017 report by the American Association of University Women. In 2017, less than one in 10 women in the data workforce were minorities: Asian (5%), African American (3%) and Hispanic (1%).

Through its programming, Girls Inc, a non-profit serving girls ages 6 to 18 at more than 1,400 sites in 400 cities across the US and Canada, has prepared girls to study in STEM fields and attain college and postgraduate degrees. Over the past 4 years, Girls Inc of New York City (GINYC) has introduced hundreds of high school girls to the field of data analytics through Generation Giga Girls (G3): The Moody's Data Analytics Program. However, the demand for more programming, serving more girls at an even earlier age, has become a critical priority.

To achieve this, GINYC has partnered with the Elsevier Foundation to launch a first-of-its-kind introduction to data analytics for girls as young as 8th grade using a social justice lens. Underserved girls often lack the basic hard and soft skills required to thrive in intensive programs like G3. The 8th grade is also a crucial year as students begin to get harder academic coursework, develop time management and organizational skills while being exposed to competing priorities with increasing responsibility at home and social pressure among peer group. Pre G3 aims to fill that gap by creating a strong data skills pipeline for talented young women.



Demographic

Girls age 12-15 years

Budget

\$100,000

Location

Girls Inc. of New York City (GINYC) runs the program throughout the five boroughs of New York City.

Primary outcome

Middle school-aged girls completing Pre-G3 will have a firm grasp of core skills and concepts, greater confidence in their ability to succeed in a more rigorous mathematically focused course, and a stronger interest in continuing their study of data analytics.

Goals

- Improve math scores and overall academic scores.
- Increase curiosity in STEM, with particular emphasis on data science.
- Increase belief in the importance of data analytics and STEM.
- Increase the percentage of students who demonstrate readiness for high school-level study in STEM fields.
- More than 50% of girls who complete Pre-G3 will participate in the G3 program.
- Increase the percentage of students who demonstrate readiness for college- level study in STEM fields.
- Increase the number of students who graduate from a post-secondary institution with a degree in a STEM field

Milestones

40 teen girls from all across NYC joined the launch of Pre-G3 in June 2019 during the annual Summer Data Analytics Institute. The Institute ran Mon-Thu, 9am-4pm for 4 weeks. It engaged the girls in the world of data science and its effects on their interactions with nearly every aspect of their lives.

- Over the 4 weeks, the girls were introduced to Giorgia Lupi's data visualization work, which provided an accessible introduction to "humanistic" and creative ways for improving the accessibility of information through visual representations. Lupi's work helped to inform their final projects and the way they chose to represent data around topics that included immigration, mental health, and the school-to-prison pipeline.
- In September 2019, partnered with two middle schools (in East Harlem and the Bronx) to implement the Pre-G3 program as a class for 2 cohorts of middle school girls.
- In Spring 2020, partnering with 3 middle schools and one high school to implement the course over 15 weeks.
- Hosted trainings in for NYC educators at existing partner school.

Level of evidence

Level 1	Quasi-experimental
Level 2	Pre-post or cross-sectional
Level 3	Point-in-time study
Level 4	Performance metrics/stats
Level 5	Anecdotal evidence

GINYC applies an Outcomes Measurement Strategy designed to help illustrate and showcase the measurable difference they make. They contract with Philliber Research Associates to evaluate behavioral outcomes as well as academic performance.



Above: Mariama answers a question in a lesson about probability and fairness in a class of the Pre-G3 Elsevier Data Analytics Preparatory Program class.



Left: Marguerite Copeland, Program Specialist for Girls Inc. of NYC, flips a coin in a lesson about probability.

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Future plans

- Recruitment of 50 girls for the 4-week summer institute
- Identify a new cohort of 10-15 middle and high schools to partner with during the 2020-2021 school year and serve 200 girls.
- The Staten Island Borough President's office is interested in piloting the Pre-G3 program in 5 middle schools

Challenges

One of the major challenges has been capacity to reach more girls; most schools don't have the ability to provide an educator to facilitate the integration of Girls Inc. They are working to confirm partners and identify teachers in advance to provide them with greater flexibility to attend a week-long summer training. GINYC is also planning to offer incentives to increase retention amongst students. In response to the COVID19 health response and school shutdowns in New York City, Girls Inc. was able to rapidly move Pre-G3 and many of its other programs online to ensure that the girls continue their vital skills- building during this difficult Spring period.

