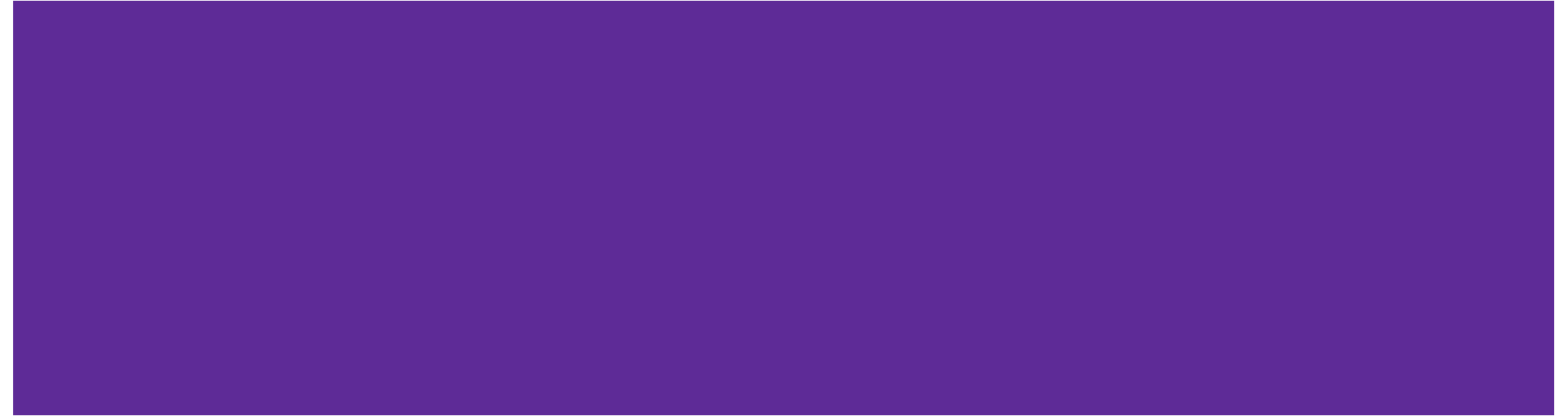


# **Promoting Childhood Education at Squashbusters and Science Club for Girls**

Elizabeth Ha and Jillian Jurczyszak



# Introduction



# Science Club for Girls



Science  
Club  
for Girls

- Offers free science programming to girls in K-8 from underrepresented groups
  - Hands-on science activities
- Address lack of diversity and inclusion in STEM
  - 83% of participants come from SCFG's prioritized groups
- Programs occur after school and on Saturday mornings
  - In-person and virtually
- 625 participants and 120 Mentors/Junior Mentors



# “SCFG in 90 Seconds”



# Squashbusters

- In-person after-school program for middle and high-schoolers
- M-F 3:00pm-6:00pm
- Weekday Activities
  - **Academics:** Homework Help
  - **Character Building:** Enrichment
  - **Physical fitness:** Squash
- Outside Activities
  - Community Service
  - Squash Tournaments
- Provides those with limited opportunity to gain meaningful experiences



# “Beyond the Courts, 60sec. version”



# Disciplines



# Our Disciplines

- Jillian
  - Biology major, Behavioral Neuroscience minor, premed track
  - Volunteering at SCFG for past 2 years
  - Interested in pediatrics
    - Health disparities begin in early childhood
- Elizabeth
  - Biochemistry major, pre-med track
  - Volunteering at SQB since January 2023
  - Strong advocate for education
    - Precursor for many factors that influence QoL



Overall science: Nurture just as important as nature, must start early!



# **Community Needs Assessment**



# SCFG: Community Analysis

- **Mission:** “To foster excitement, confidence, and literacy in STEM for girls and gender-expansive youth from underrepresented communities by providing free, experiential programs and by maximizing meaningful interactions with women-in-STEM mentors.”
- **Location:** The Port Neighborhood of Cambridge
  - Racially and ethnically diverse
- **Community served:** girls and gender-expansive youth in grades K-8 from groups underrepresented in STEM
  - 83% of participants are people of color, low-income, and/or first generation immigrants

# SCFG: SDOH

- **Health-promoting factors:** green spaces, health care access, community centers
  - Cambridge Health Alliance: Accountable Care Organization
    - Department of Community Health Improvement
  - Moses Youth Center: afterschool programming for teenagers
  - Cambridge Community Learning Center & Cambridge Employment Program
- **Health-damaging factors:** limited access to healthy food, gentrification, crime



# SCFG: Assets

- Connections to local biotechnology companies
  - Serve as packing partners
- Financially solvent
  - “Only 4%” fundraising campaign
  - Grants
- Connections to local universities
  - Northeastern, MIT, Harvard
- Paid professionals working for the organization

Thank you



# SCFG: Constraints

- People power leaves at end of semester
  - Rely mostly on college students to serve as mentors
  - Limited volunteers for summer programs
- Inconsistent attendance from mentors
- Not able to accept all participants who apply
- Not well equipped for children with special needs



# SQB: Community Analysis

SquashBusters challenges and nurtures under-served youth – as students, athletes and citizens – so that they recognize and fulfill their greatest potential in life

**Location:** Squashbusters Gym on Northeastern's campus

**Community Served:** Middle and high schoolers demonstrating obstacles in educational attainment

- Often POC attending BPS schools from Roxbury, Mattapan, and Dorchester

**Health concerns:** None apparent, healthy active students



# SQB: SDOH

Students go to BPS and live in Roxbury, Dorchester, and Mattapan.

## Health-promoting Factors:

- Green Space
- Transportation
- Many healthcare centers

## Health-damaging Factors:

- Income
- Access to healthy food
- Housing/Neighborhoods



# SQB: Assets

- High-quality facilities
  - Classrooms, lockers, squash courts
- Ease of transportation
  - Ruggles, Bluebikes, walkable city
- Association Partners
  - Learn business + other important life topics, improve squash, host events, etc.
- Institution Partners
  - College students: volunteers and speakers
  - Summer college programs



SQUASH +  
EDUCATION  
ALLIANCE  
PROUD MEMBER

WESTFIELD  
CAPITAL MANAGEMENT





# SQB: Constraints

- Limited program managers
  - Crowd control
- Lack of independent summer programs
  - Rely on other organizations
- Finance
  - Donors; finances can go up and down
  - May reduce staff even more
- Untrained volunteers
  - Lack of commitment + children



# Overall Social Problem and Root Cause

Systemic Inequalities in education and health resulting from a low income background

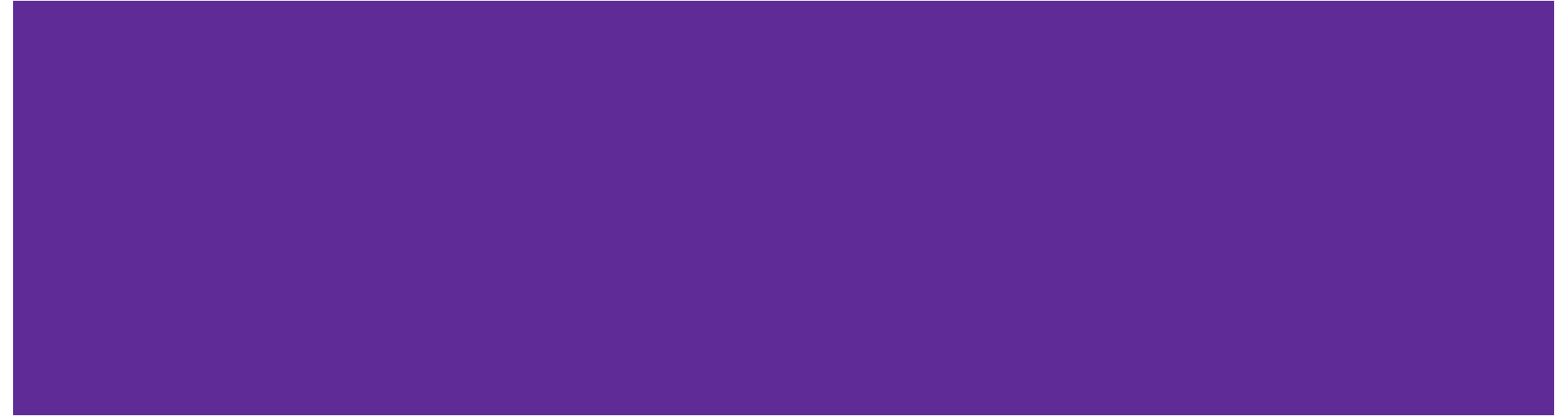
## Education

- Less academic resources (tutoring, SAT Prep, new textbooks)
- Limited time for extracurriculars
- Decreased school readiness
- Less educational attainment
  - Implications on health





# Intervention



# SCFG: Intervention

- “Dig Into the Past” theme this Fall
  - Focus on evolutionary biology, archaeology, and data science
    - Dissecting owl pellets, examining fossils, designing bridges
  - Leading group of 7th-8th grade students
- Junior Mentor programs
  - Teach high-school-aged former participants how to run the clubs
  - Leadership development
- Goals
  - Improve participants’ STEM knowledge and skills
  - Provide supportive learning environment that encourages girls to think of themselves as scientists



“Over the last thirteen years, >90% of our high school juniors and seniors have gone on to college (up 20% over the national average) and of those girls, >55% of them choose to major in STEM.”

# SQB: Intervention

- Facilitate homework help and enrichment activities
  - Read over college essays
  - Tutor in a variety of subjects
  - Participate in enrichment activities
- Additional role: to act as a role model and a person to come to for advice
- Goals:
  - Encourage students to pursue a high level of education attainment
  - Facilitate a sense of belonging



# Measuring Impact of Service



# SCFG: Surveys

- SCFG surveys participants and Junior Mentors at the beginning and end of each semester
- Participants rate how strongly they agree with the following statements:
  - I like to do science activities
  - I am good at solving problems
  - I think I can do well in science/math at school
  - I am curious to know more about science
  - Someday I would like a job where I can use math
- Junior Mentors
  - Someday I would like a job where I can teach others
  - I think STEM careers are a possible option for my future
  - I have learned something about how to work well in a team
  - I feel like I have developed a positive relationship with an adult at SCFG
  - I have an interest in taking more challenging STEM classes in the future



# SQB: Informal Discussion with Supervisor

## Impact of intervention

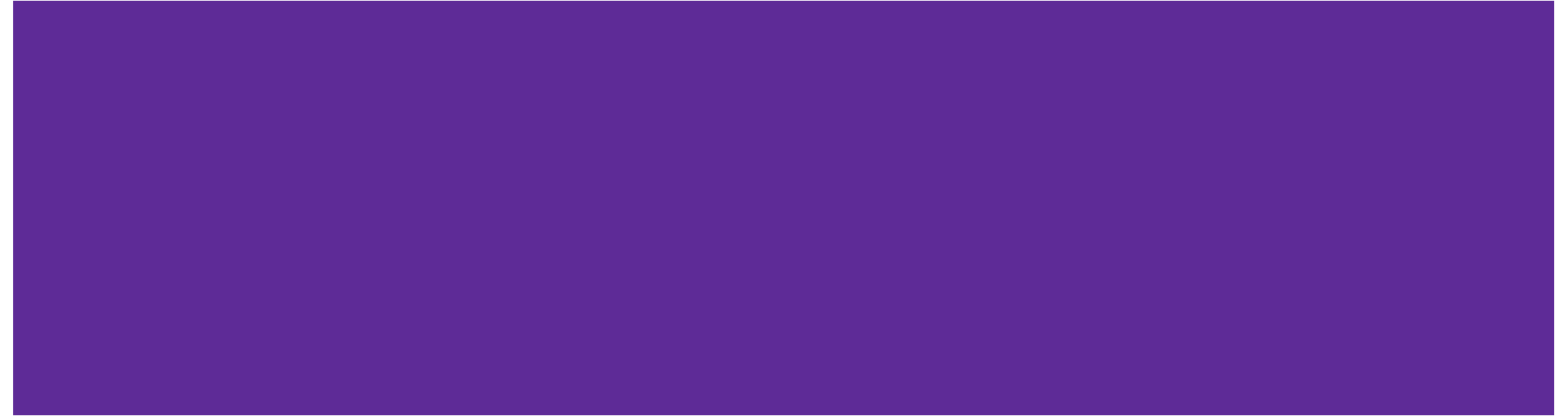
- Students appreciate volunteers who make attempts to interact and actually get to know the members (50% of current volunteers)
- 30 volunteers a week, 1-2 hour commitment
- Lack of recurring volunteers

## Evaluation of Program

- SQB alumni often return to help out
- High membership retention rate
- 98% of graduates enroll in college



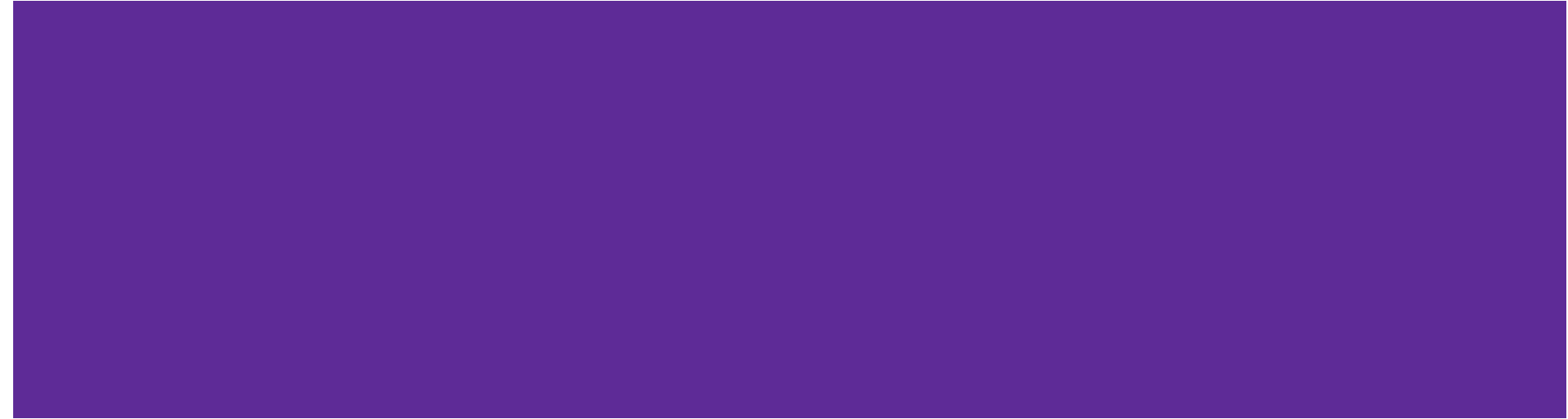
# **Sustaining service**



# Suggestions for sustainability

- Heavy reliance on college students to serve as volunteers
  - Not necessarily integrated members of the community
  - Related to ABCD: community-driven development
- Should focus on recruiting working professionals as volunteers/full-time workers
  - More likely to be able to provide long-term, year-round commitment
- SCFG: continue Junior Mentor program
  - Promotes generativity
- SQB: continue co-op partnership with Northeastern

# Conclusion



# Conclusion

- SCFG and SQB are both afterschool programs that educate underserved youth
- **Root Cause:** Lack of educational attainment experienced by low income POC
  - Impacts income, health, and overall quality of life
- **Mutual Assets:**
  - College Students
  - In-person Facilities
  - Association/institution partners
- **Mutual Constraints:**
  - People power
  - Volunteer commitment
- Both programs have high retention and success rates amongst members
- How to sustain nonprofit: increase amount of working



**Q&A**



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