PUMAS 2022

What is it?

- A nine-week paid biomedical research internship funded by the National Institutes of Health (NIH)
- Gives hands-on lab experience, networking opportunities with research faculty, and exposure to different career paths in science and health
- PUMAS’s principal investigators and graduate student/postdoc mentors are committed to building gender and ethnic diversity in STEM/health

Who is it for?

- Underrepresented* community college students with intentions to transfer to four-year institutions as STEM majors
- Small cohort (8–12) accepted per year

Who were the 2022 participants?

- 100% From underrepresented populations**
- 3.82 average college GPA
- 42% first-generation college students
- $80,520 median household income
- 100% aimed to pursue a STEM-related degree

Impact of the program

Intern self-assessments

Self-reported: 1 (low) to 5 (high)

- Confidence in data collection skills: Before 3.0, After 3.7
- Ability to develop scientific theories: Before 2.8, After 3.5
- Confidence in verbal scientific communication: Before 2.9, After 4.0
- Sense of belonging to community of scientists: Before 3.2, After 4.2
- Knowledge of responsible conduct of research: Before 3.1, After 3.7

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* The National Science Foundation (NSF) considers groups to be underrepresented minorities (URMs) when they “constitute disproportionally smaller percentages of employed scientists and engineers than they do of the US population” as a whole. Currently, the NSF identifies members of the following groups to be URMs: “Women, persons with disabilities, and three racial and ethnic groups—Blacks, Hispanics, and American Indians or Alaska Natives” (Women, Minorities, and Persons with Disabilities in Science and Engineering. 2017. www.nsf.gov).

**This includes first-generation college students.
Interns increased the average size of their professional networks from 17 contacts at the start of the program to 50 contacts at the end.

- **Impact (cont.)**
  - **Mentor assessments**
    - **Self-reported: 1 (low) to 5 (high)**
      - **Use of technical skills**: Before: 1.9, After: 4.1
      - **Ability to create explanations for study results**: Before: 1.9, After: 3.9
      - **Verbal communication skills**: Before: 2.7, After: 3.7
      - **Practice of lab safety**: Before: 1.7, After: 3.5

- **All interns** increased their knowledge of career readiness and graduate/professional school topics.

- **Alumni**
  - 36 alumni completed the PUMAS program between 2017 and 2021, of whom 53% responded to the 2022 follow-up survey.

  - **95%** sustained or increased interest in biomedical science
  - **100%** intend to pursue STEM-related careers
  - **95%** completed, attending, or transferring to four-year institutions
  - **79%** aspire to advanced degrees (MS or higher)
  - **90%** were in contact with PIs and/or mentors last year

- **GLADSTONE INSTITUTES**
  - Founded in 1979, Gladstone Institutes is an independent biomedical research institution with a focus on finding new pathways to cures. Over 350 scientists and trainees work at Gladstone using science and technology in cardiovascular biology, immunology, neuroscience, and stem cell biology to study unresolved diseases. A common belief of the organization is that diversity will bring the best solutions to the world’s scientific challenges.

- **Actionable Insights** is a consulting firm that helps organizations discover and act on data-driven insights. Using their expertise in applied research and program evaluation, the firm’s partners work with nonprofits and government agencies to measure impact in the areas of health and wellness, housing, STEM education, and youth development.