

Undergraduate Research Students Believe That College HOFSTRA Anyone Can Be a Scientist – Regardless of Race and Gender





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INTRODUCTION

· Stereotypes of scientists as male, Caucasian, mythical, and undesirable have deterred minority students and women from pursuing a science career1.

Research Questions & Hypotheses

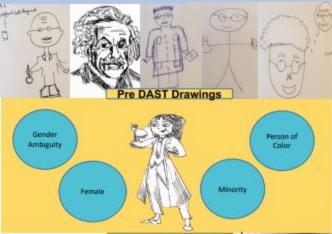
- Will students' scientist drawings depict an increase in females, minority groups, and sexual orientations pre-post their Research Experience for Undergraduates (REU) experience2?
- Will students' scientist drawings depict an increase in REU-related experiences (i.e., poster sessions, science identity themes) pre-post their REU experience?
- We hypothesize that student drawings will depict an increase across these domains.

METHODS

- REU students participated in a semesterlong laboratory research immersion and attended didactic seminars.
- The research design used was a singlefactor two-level repeated measures (prepost) design.
- · Students' pre-post drawings of scientists were measured using the Draw-A-Scientist (DAST) task and scored using the DAST-Checklist (DAST-C)3.

Demographics

- Sample: n=19 (M=23.37, SD=3.24) across two REU cohorts (2019-2021) impacted by Covid-19 participated.
- Most participants were female, 79.0%. Students were 47.4% Caucasian, 15.8% Asian/Pacific Islander, 21.1% Hispanic/Latino, 10.5% African American, and 5.3% Other.





REU students' representations of scientists change to more diverse characters after REU training



RESULTS

A paired samples t-test found that students' pre-post drawings demonstrated an increase in features depicting REUrelated experiences. Coding was based on a 20-point scale (1 point per category). Tallied descriptors included scientists presenting poster sessions, working on laptops, submitting IRB protocols, publishing research papers, and other REU-experienced science-identity themes. t(16) = 4.19, p < .001, d = 1.02.



 In contrast with pre-DAST depictions. post-REU drawings were purposeful in their ambiguity and included bi-sexual sex symbols, silhouettes, shaded skin tones, question marks, and diverse body styles to show that "everyone is a scientist" (see text in image ().

CONCLUSIONS

- Future research should promote greater access to formal research experiences and implement diversity-focused themes in undergraduate-level research methods coursework.
- With continued efforts from educators and policy makers, undergraduate students will continue to learn that anyone from anywhere can be a scientist.

Acknowledgment

We want to thank the National Science Foundation (Awards: 1757560, 2050755).

Literature Cited