



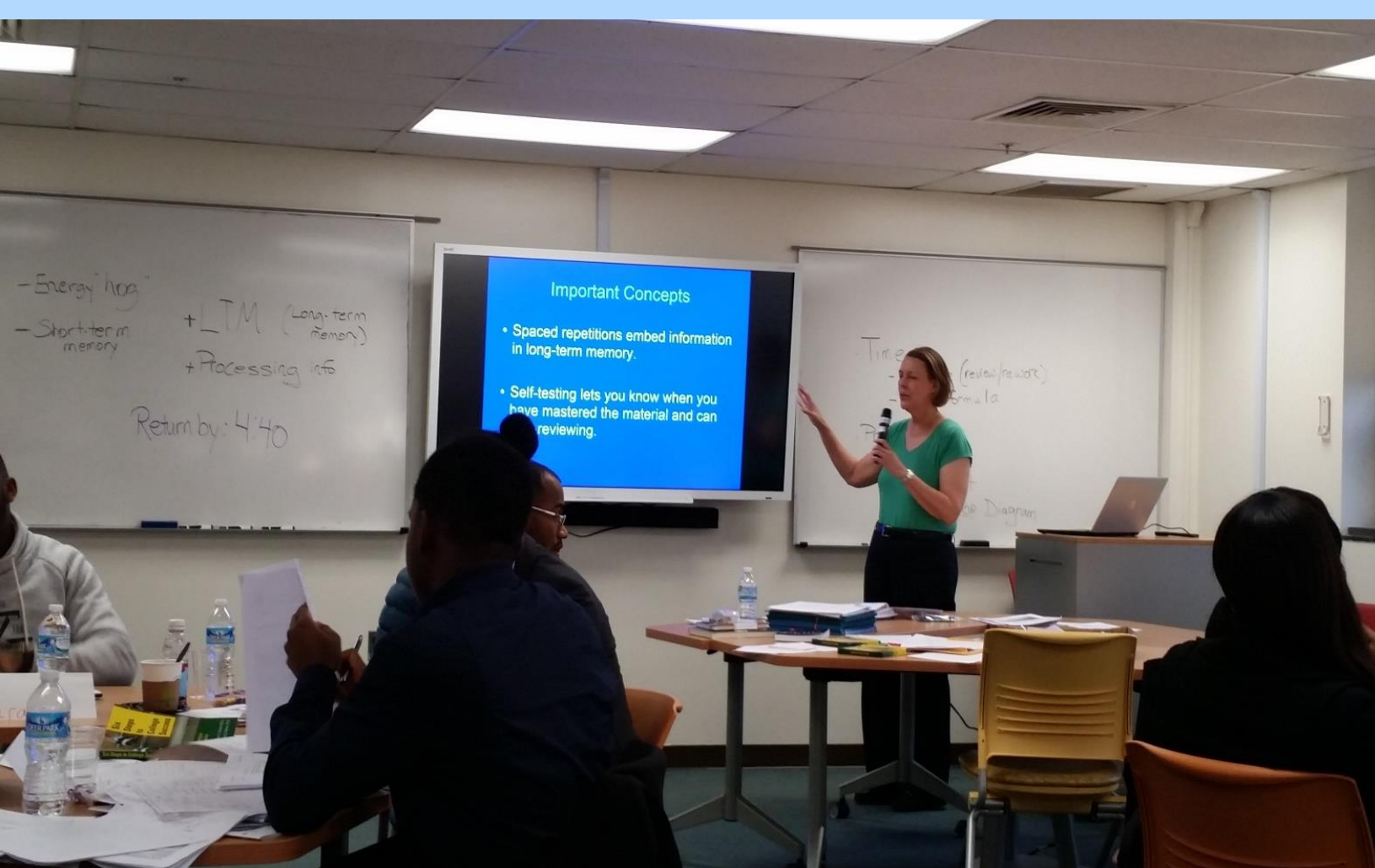
Diversifying the Biomedical and Behavioral Science Research Workforce

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ABSTRACT

This study examines preliminary data from the first cohort of student participants who completed the first year of a 2-year entrepreneurial research training program (ASCEND) funded through the NIH "Building Infrastructure Leading to Diversity" (BUILD) initiative. Twenty students were selected as participants in the inaugural cohort. Students participated in several skill-building and career development workshops, interdisciplinary seminars, and study skills workshops. Pre-post data were collected on key measures of graduate school readiness such as critical thinking and study skills, writing skills, and knowledge of health disparities and prevention research. Paired-samples t-tests suggest that students showed improvement in each of the areas assessed ($p < .05$).

Preliminary findings suggest that the entrepreneurial training program may provide students with the requisite skills needed for successful entry into graduate school. Implications are discussed.



INTRODUCTION

Increasing the participation of underrepresented populations in the biomedical and behavioral research fields is vital to ensuring a high-quality supply of biomedical scientists in the United States. Unfortunately, many underrepresented students do not see research careers as a viable option and many choose not to pursue graduate education. Among the key elements for students' successful entry into competitive research graduate schools in the biomedical and behavioral sciences are: early identification of students with interests and potential talent for biomedical research, high expectations of student performance and strengthening support if needed, mentoring and peer support, and required research participation.

To address this, Morgan State University received funding from the NIH BUILD initiative to recruit and train 70 students over 5-years to prepare them for graduate level training in the biomedical, behavioral, and social sciences. A Student Centered Entrepreneurship Development (ASCEND) program uses an innovative interdisciplinary entrepreneurial research training model (ERTM). The ERTM includes self-directed learning, team learning, learning through experience, and critical self reflection. It is hypothesized that the ERTM will increase research knowledge and competencies, improve research self-efficacy, foster interdisciplinary collaborations, increase interest in biomedical/behavioral science research, and improve admittance into graduate school.

Selection Criteria:

- Interest in biomedical or behavioral sciences
- Sophomores or Juniors
- GPA of 3.0 or higher
- Participation in the ASCEND Summer Research Institute

ENTREPRENEURIAL RESEARCH MODEL



PROGRAM COMPONENTS

- ☐ **Two-years of funding (stipends/tuition/travel)**
- ☐ **Year 1**
 - Development of Individual Development Plan
 - Skill Building Workshops/Coursework/Professional Development Activities/GRE Prep (Juniors Only)
 - Mentored Team-Based Research Experience (10 – 15 hours per week)
 - Attending and Presenting at local/national conferences
 - ☐ 8-10 Week External Summer Research Training
- ☐ **Year 2**
 - Coursework/Skill Building Workshops/Professional Development Activities
 - Mentored Team-Based Research Experience (10 – 15 hours per week)
 - Attending and presenting at local/national conferences
 - Develop and complete community-based project

ASCEND SCHOLARS: COHORT 1

Gender

15 women * 5 men

Classification

11 Sophomores * 9 Juniors

Majors

8 Psychology * 7 Biology *
 2 Nursing * 1 Engineering *
 1 Health Ed/ * 1 Med Tech

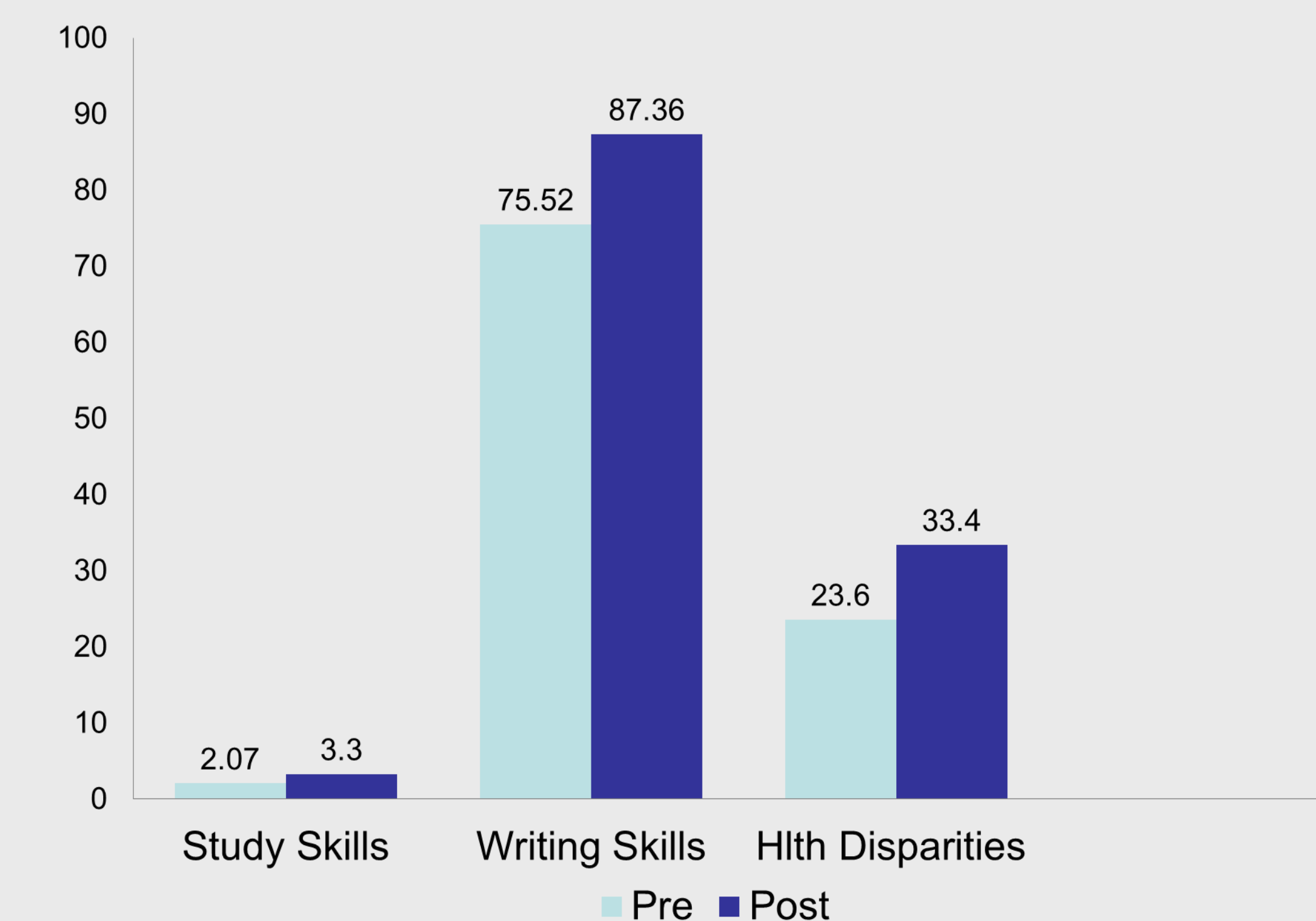


Entrepreneurial Team Research Projects

- Association between Breath Acetone, Alcohol Use, Diet, and Diabetes
- Family Structure, Coping Styles, Stress Levels and Academic Performance of African American Students
- Comparing alcohol consumption before and after homecoming week at an HBCU
- Examining the Sources of Stress among College Students in an HBCU
- Sexual Assault Among College Students at an HBCU
- Students Behavior towards a Smoke-Free Campus Policy in an HBCU



PRELIMINARY OUTCOMES *



| | Min | Max | t(df) | p-value |
|------------------------------|-----|-----|-----------|---------|
| Study Skills | 0 | 4 | -4.38(12) | .001 |
| Writing Skills | 0 | 100 | -5.06(18) | .001 |
| Health Disparities Knowledge | 0 | 40 | -5.41(19) | .001 |

*Program Year 1 Outcomes

Scholar Research

- 18 Summer Internships
- 20 Poster or Oral Presentations
- 1 ABRCMS Award Winner for Oral Presentation
- 1 Peer Reviewed publication in press
- 1 Peer Reviewed abstract submitted for publication

Graduate School Preparation & Acceptances

- 18 Summer Internships
- 8 Grad School Interviews
- 4 Grad School Acceptances

IMPLICATIONS

Preliminary findings from Cohort 1 scholars showed that scholars improved their study skills, writing skills, and knowledge of health disparities. Scholars have also been successful in applying to and being admitted into summer internships and graduate programs with a biomedical or behavioral science focus.

Engaging underrepresented students in the entrepreneurial research training program may increase their participation in biomedical and behavioral health fields. A review of data from subsequent cohorts and a matched sample of students will allow for an examination of possible differences between these groups in key variables thought to lead to the pursuit of biomedical research careers. Such an examination will provide statistical evidence of the impact of the ERTM.



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