

Breaking Silos and Building Partnerships Through Entrepreneurial Training

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ABSTRACT

Increasing the participation of underrepresented populations in biomedical and behavioral sciences is vital to ensuring a high-quality supply of biomedical scientists in the United States. To address this, a student-centered entrepreneurial development training model (ASCEND) was developed to increase diversity in biomedical and social sciences research careers. The program was funded through the NIH BUILD initiative and uses an interdisciplinary team-based science approach. Recognizing that it takes an “institution to BUILD a scholar”, the program includes multiple university departments and internal as well as external programs to complement student training and student-driven interdisciplinary research. This includes “breaking silos and building partnerships” with the university’s Writing Center, Office of Residence Life, Academic Enrichment Center, and Center for Career Development. An overview of the ASCEND student training program and preliminary outcomes from the first cohort of scholar participants are presented.

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. To address this, the National Institutes of Health (NIH) issued a funding opportunity entitled “Building Infrastructure Leading to Diversity” or BUILD. Morgan State University, a historically Black College/University (HBCU), received 5 years of funding from NIH to implement “A Student-Centered Entrepreneurship Development” training model (ASCEND) in an effort to increase diversity in the biomedical, behavioral and social sciences.

The program has four major components designed to increase the number of underrepresented students pursuing graduate education and biomedical research careers. The components include: 1) increasing institutional capacity for research; 2) enhance faculty development through the provision of research funding, opportunities to engage students in their research, travel funds, and funding the development of new courses; 3) increase student interest in biomedical research by using a number of strategies such as the development of a student driven team based research project during a summer research institute; and 4) enhance student preparation for graduate school through curricular and co-curricular activities, such as coursework in math/science and workshops in critical thinking and scientific writing. In this presentation the focus is on a key component of the ASCEND program, student training through the ASCEND Scholars program. Recognizing that it takes an “institution to BUILD a scholar”, the program includes multiple university departments and internal as well as external partnerships to complement student-driven research.

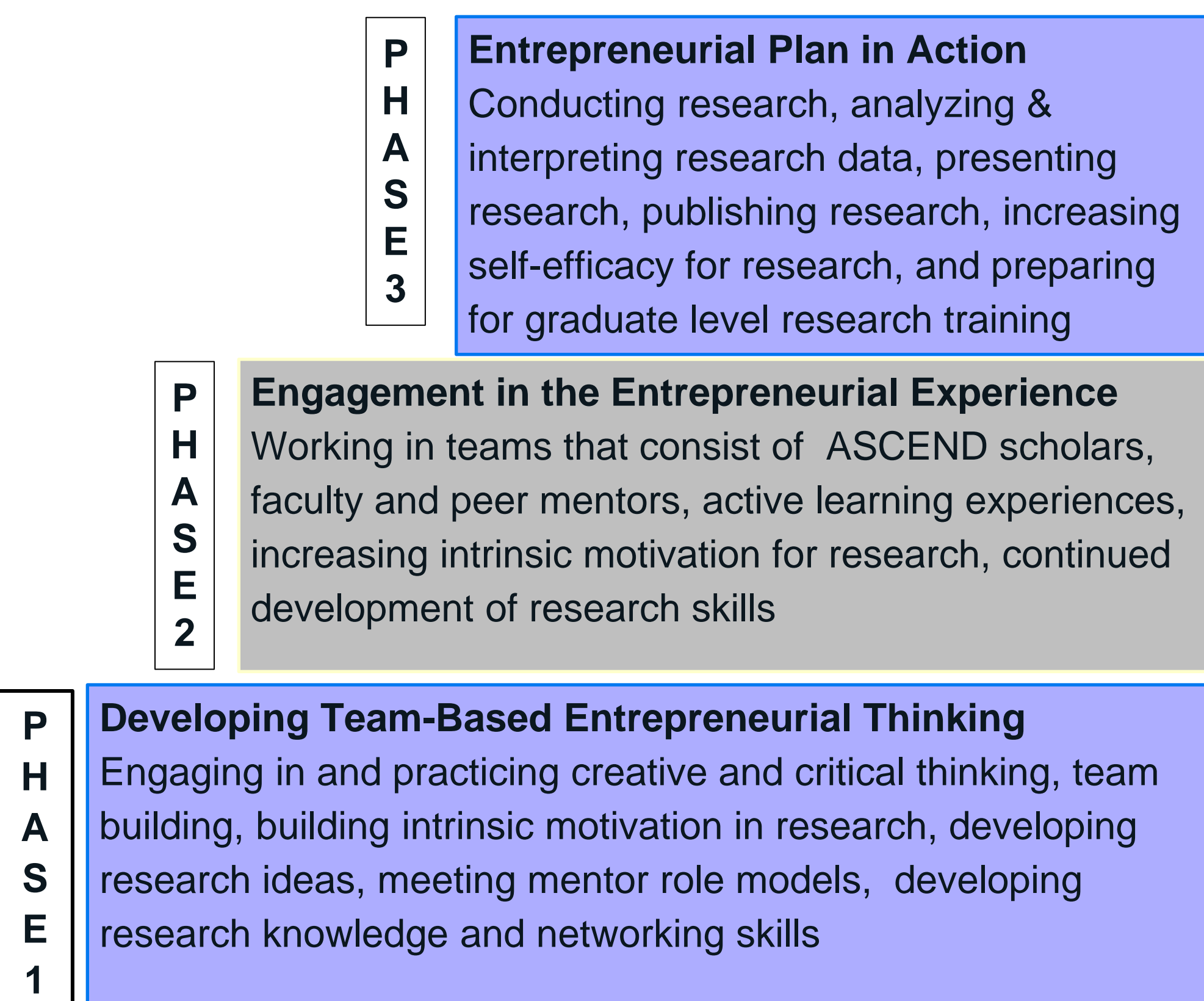
ASCEND SCHOLARS PROGRAM

Among the key elements for students’ successful entry into competitive research graduate schools in the biomedical 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. The ASCEND Scholars Program uses an 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.

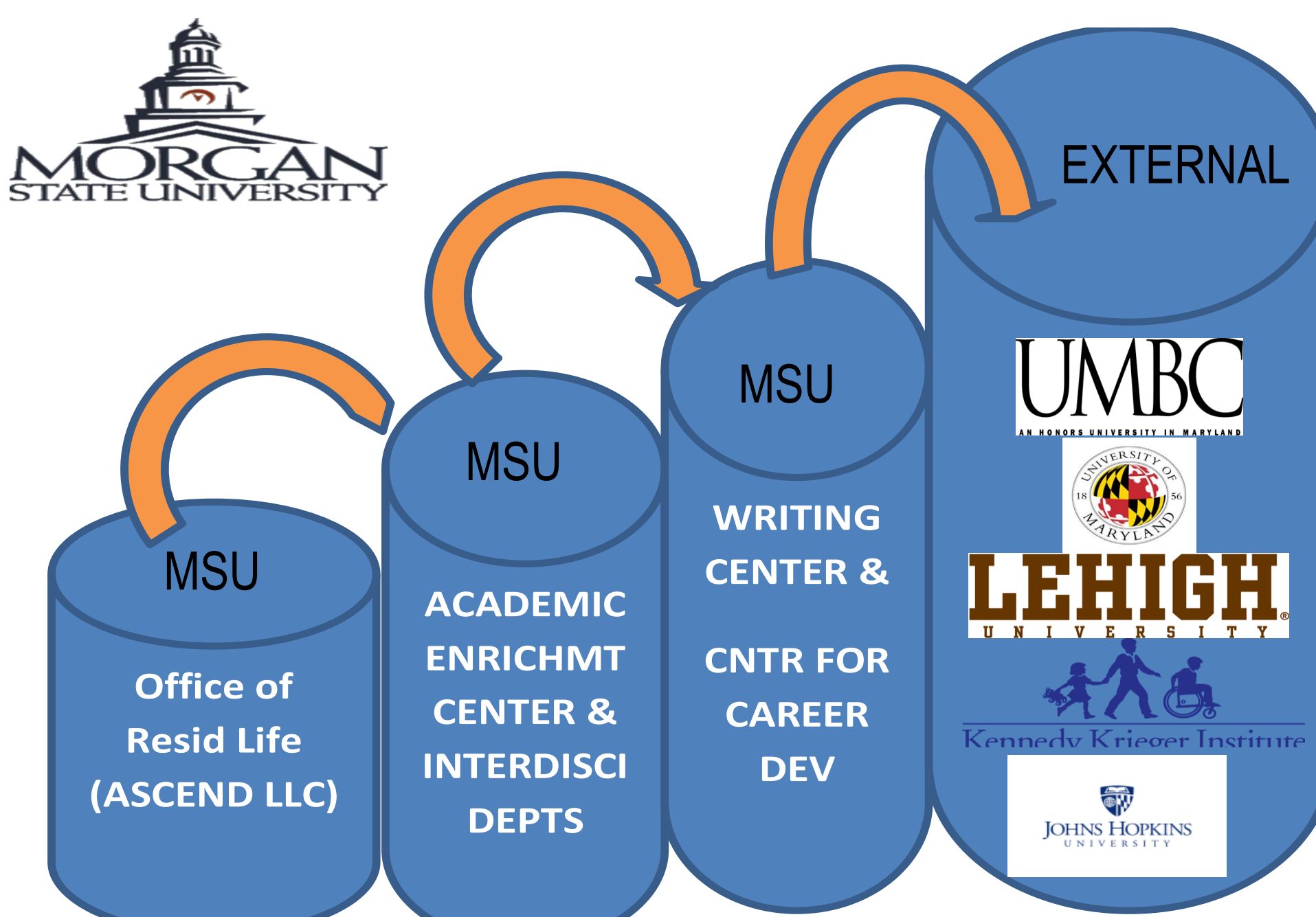
Selection Criteria:

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

ENTREPRENEURIAL RESEARCH TRAINING MODEL



BREAKING SILOS & BUILDING PARTNERSHIPS



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

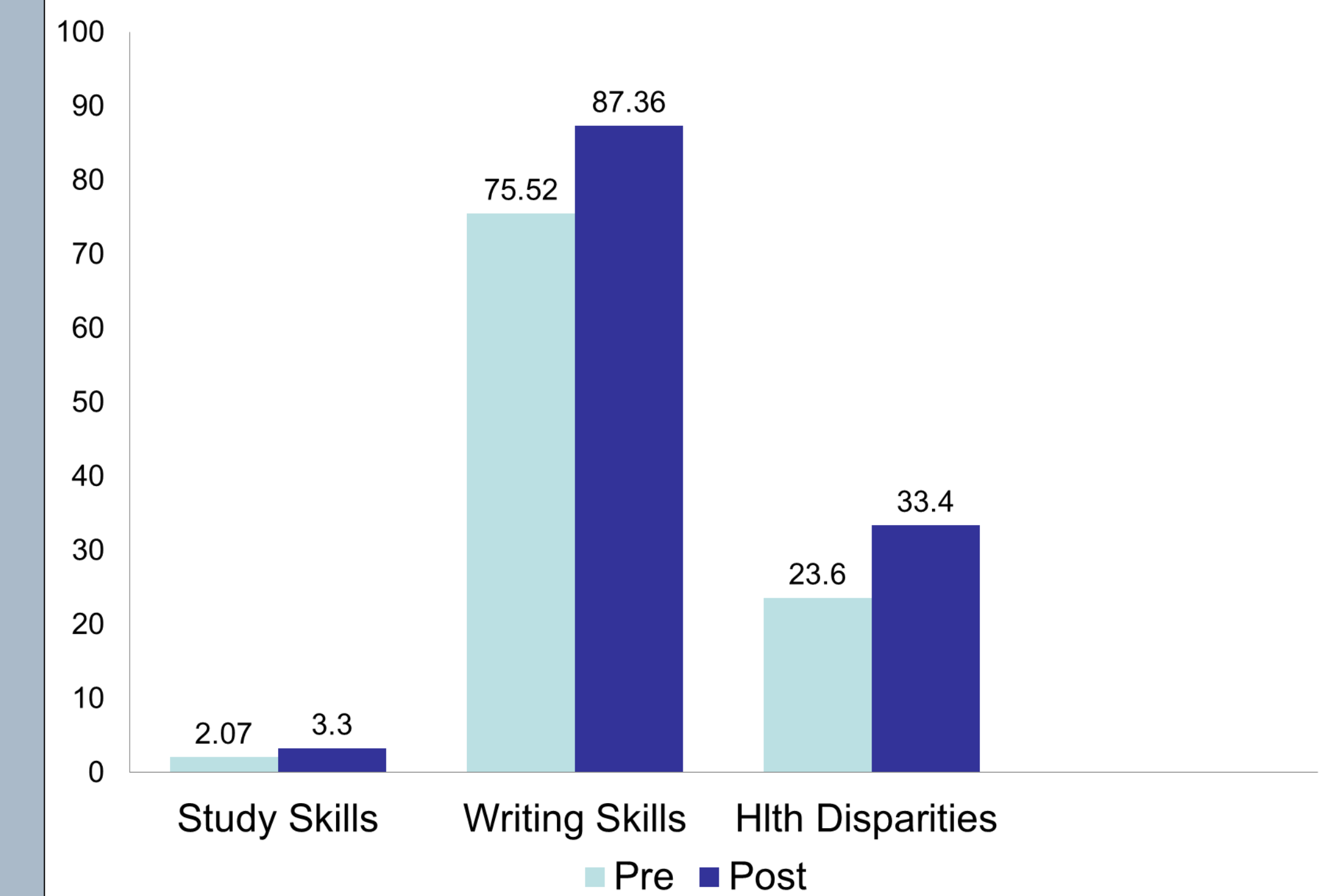


ENTREPRENEURIAL RESEARCH TEAM PROJECTS

- Association between Breath Acetone, Alcohol Use, Diet, and Diabetes
- Family Structure, Coping Styles, Stress Levels and Academic Performance of African American Students
- Comparing freshmen alcohol consumption rates to non-freshmen pre and post 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 Activities

- 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
- 9 Grad School Interviews
- 6 Grad School Acceptances

IMPLICATIONS

Preliminary findings from Cohort 1 scholars show 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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