



ASCEND: An Entrepreneurial Training Model Diversifying the Biomedical and Behavioral Science Research Workforce

Jocelyn Turner-Musa, PhD, Cleo Hughes-Darden, PhD, Oluwatoyin Ajayi, BT, Sherita Henry, DrPH, Acquanette Pinchback, BA
Morgan State University * ASCEND Center For Biomedical Research

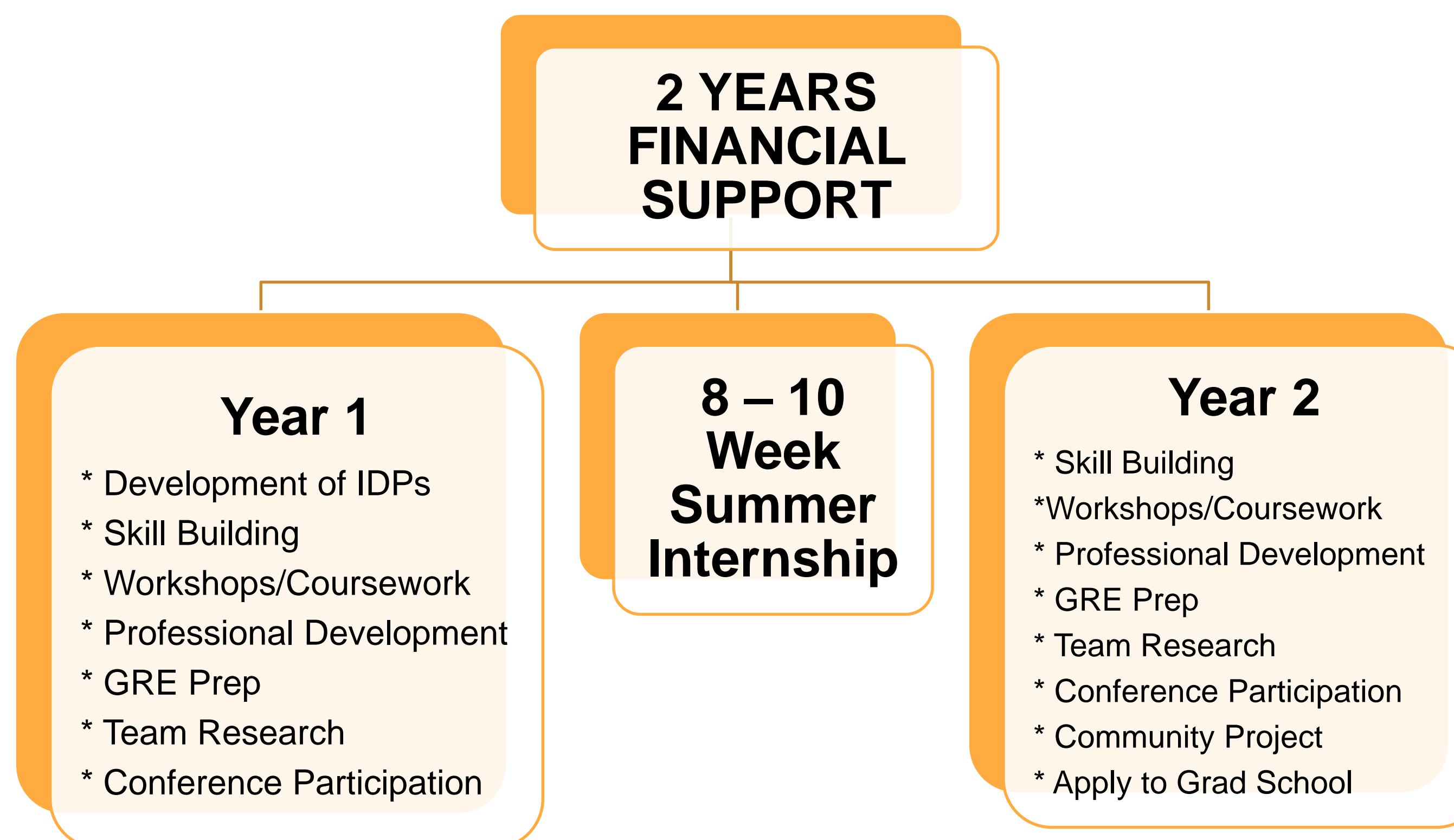


INTRODUCTION

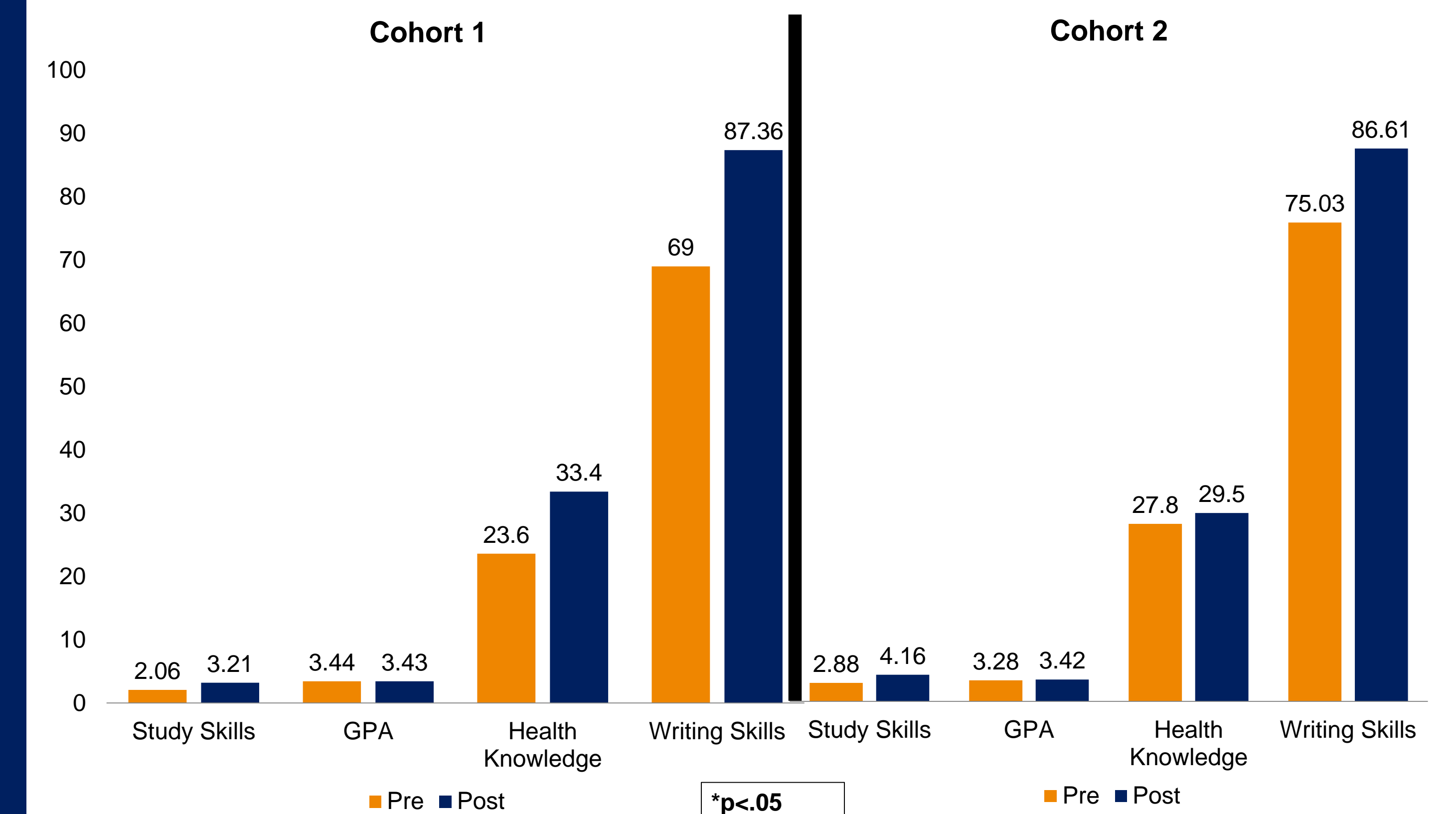
The participation of underrepresented populations in the biomedical and behavioral science research fields is vital to ensuring a high-quality supply of biomedical scientists in the United States. Unfortunately, many underrepresented students do not see research careers as a viable option and may choose not to pursue graduate education in biomedical research¹. Among the key elements for students' successful entry into graduate programs 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^{2,3}.

This study examines data from the first two cohorts of undergraduate students who participated in a 2-year entrepreneurial research training program (ASCEND) funded through the NIH "Building Infrastructure Leading to Diversity" (BUILD) initiative⁴. The program includes self-directed learning, development and execution of an interdisciplinary team-based research project, team learning, and critical self-reflection. It is hypothesized that the model 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.

PROGRAM COMPONENTS



PRELIMINARY OUTCOMES*



ENTREPRENEURIAL RESEARCH MODEL

P H A S E 3
Entrepreneurial Plan in Action
Conducting research, analyzing & interpreting research data, presenting research, publishing research, increasing self-efficacy for research, and preparing for graduate level research training

P H A S E 2
Engagement in the Entrepreneurial Experience
Working in teams that consist of ASCEND scholars, faculty and peer mentors, active learning experiences, increasing intrinsic motivation for research, continued development of research skills

P H A S E 1
Developing Team-Based Entrepreneurial Thinking
Engaging in and practicing creative and critical thinking, team building, building intrinsic motivation in research, developing research ideas, meeting mentor role models, developing research knowledge and networking skills (SRI)

SELECTION CRITERIA

- Interest in biomedical and/or behavioral/social sciences
- Sophomores or juniors
- 3.0 or higher GPA
- Participation in ASCEND Summer Research Institute (SRI)
- High ratings by SRI instructors

	GENDER	CLASSIFICATION	MAJORS
COHORT 1	15 Women 5 Men	11 Sophomores 9 Juniors	8 Psychology * 7 Biology 2 Nursing * 1 Engineering 1 Health Ed * 1 Med Tech
COHORT 2	16 Women 4 Men	8 Sophomores 12 Juniors	4 Psychology * 7 Biology 3 Social Work * 2 Health Ed 1 Politic. Sci * 1 Nutritional Sci 1 Engineering * 1 Physical Ed

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ASCEND SCHOLARS



- COHORT 1**
- Scholar Research Activities**
- 18 Summer Internships
 - 20 Poster or Oral Presentations
 - 1 ABRCMS Award Winner for Oral Presentation
 - 2 Award Winners for Presentation at MSU Student Conference
 - 1 Peer Reviewed publication
- Graduate School Acceptances**
- 6 Grad School Acceptances



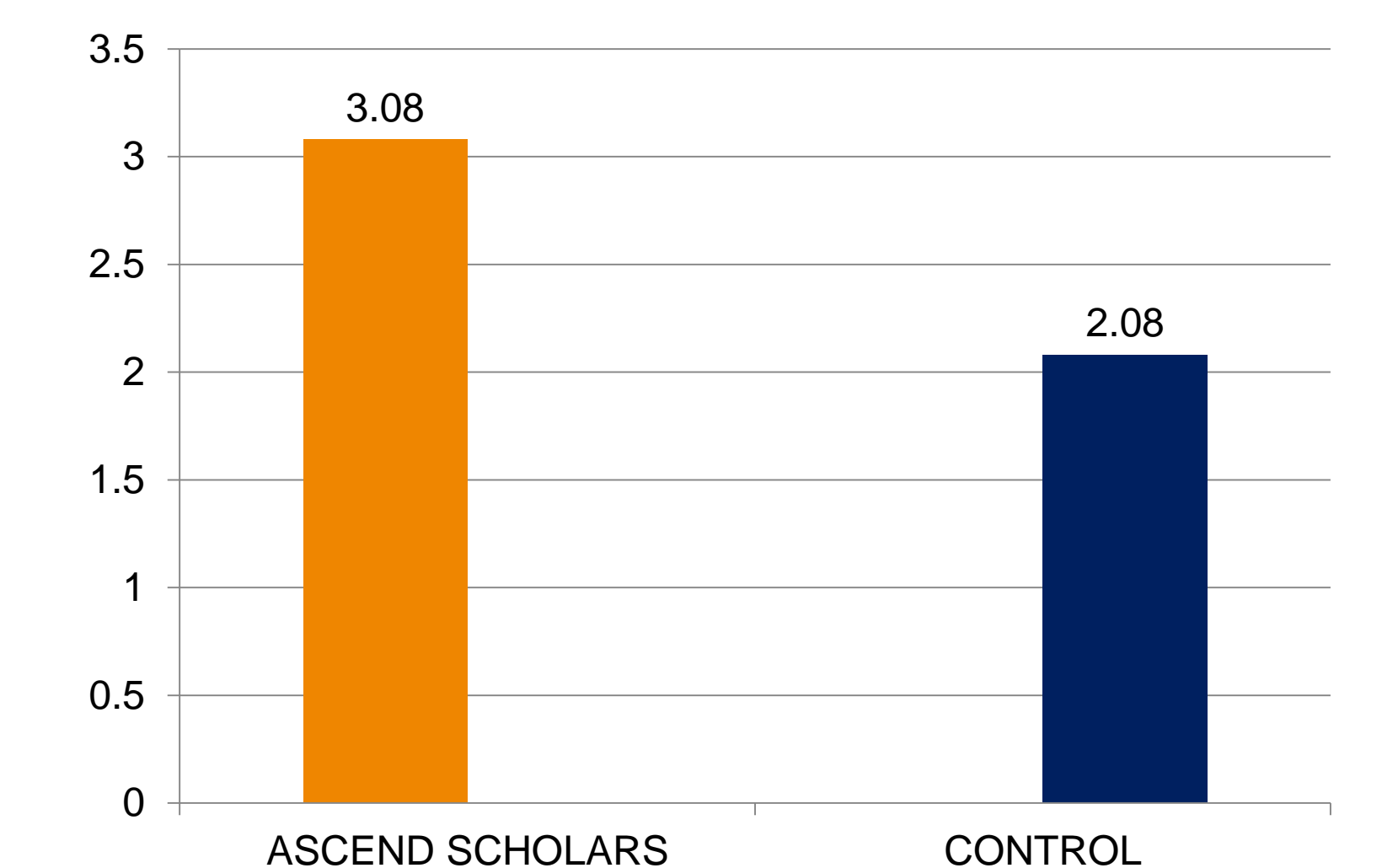
- COHORT 2**
- Scholar Research Activities**
- 19 Summer Internships
 - 25 Poster or Oral Presentations
 - 2 Award Winners for Poster Presentations
 - 5 Student Leaders
- Graduate School Acceptances**
- 1 Grad School Acceptance

Biomedical Science Identity

20 item measure (1 – 4 Likert scale)
α = .95

Measures:

- Science Self-Efficacy
- Self-belief
- Aspirations
- Contributions
- Sense of belonging



INDIVIDUAL DEVELOPMENT PLAN (IDP)

	COHORT 1 SELF-ASSESSMENT			COHORT 2 SELF-ASSESSMENT		
	Academic Skills	Research Skills	Prof. Dev. Skills	Academic Skills	Research Skills	Prof. Dev. Skills
YEAR 1	3.401	3.102	3.129	2.938	3.112	3.387
YEAR 2	3.660	3.407	3.750	3.567	3.417	3.333

IMPLICATIONS

Preliminary findings from Cohort 1 and 2 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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