



# Aligning Identities and Diversifying STEM

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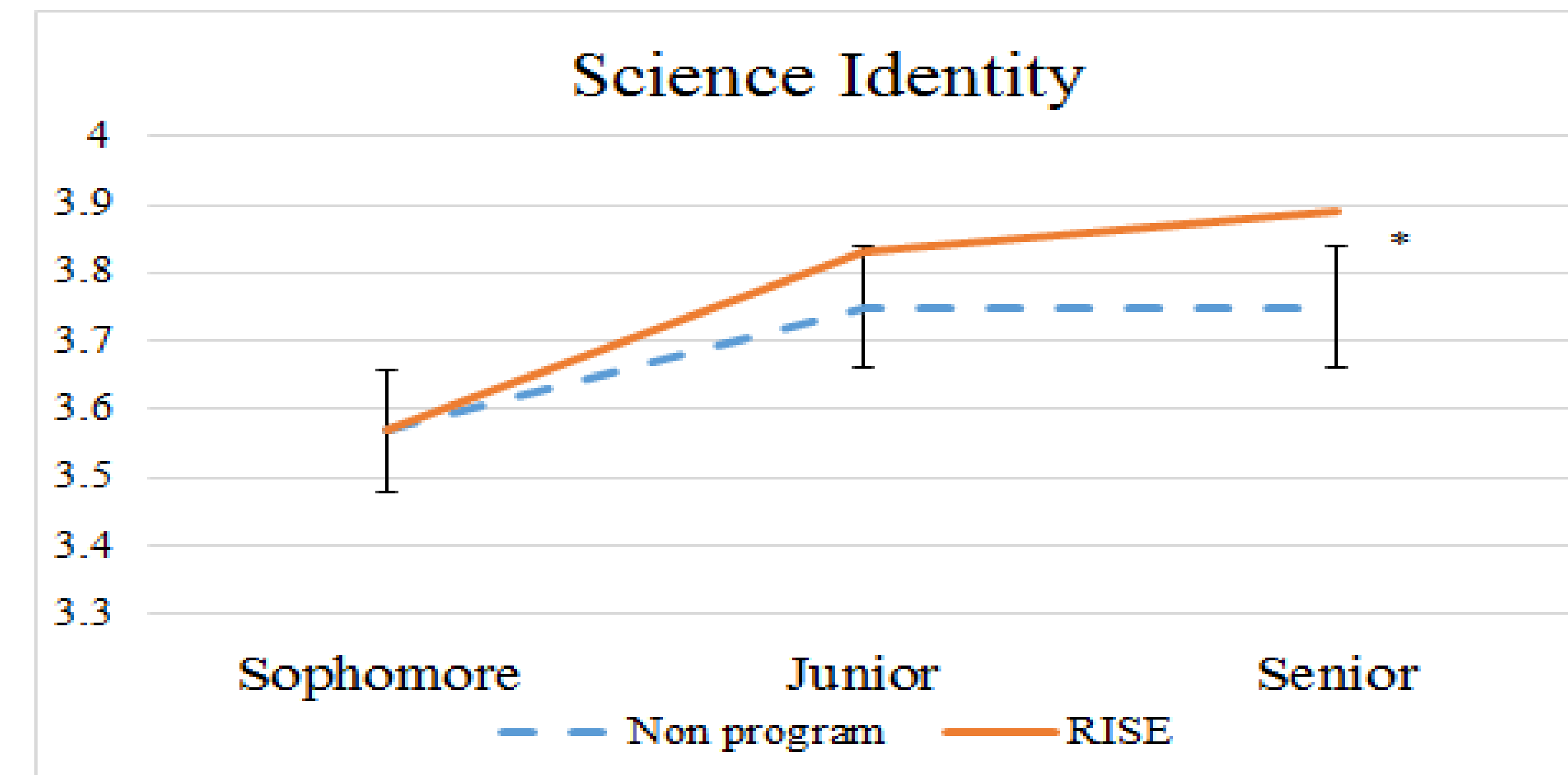
## INTRODUCTION

- Underrepresented minority students (URMs) “leak” from each juncture of the academic scientific pipeline in disproportionately greater numbers than their White and Asian counterparts.
- Stereotype threat predicts URM’s disidentification with STEM careers (Woodcock, Hernandez, Estrada, & Schultz, 2012).
- Minority training programs (MTPs) have been shown to sustain URM interest in scientific research careers, while also increasing their science identity, which is the ability to see themselves as scientists (Schultz et al., 2011).
- Empirical evidence suggests that MTPs increase the likelihood that a student will pursue a scientific career, and may create a context that promotes resilience to the downstream consequences of stereotype threat (Woodcock, Hernandez, & Schultz, 2015).
- When a student’s cultural identity and emerging identity as a scientist are not compatible, they may feel forced to make a choice between the two, often dismissing the latter (Darling et al., 2008).
- Individuals who see multiple social identities as compatible have been shown to have better outcomes and greater feelings of belonging in stereotyped domains (Darling et al., 2008).

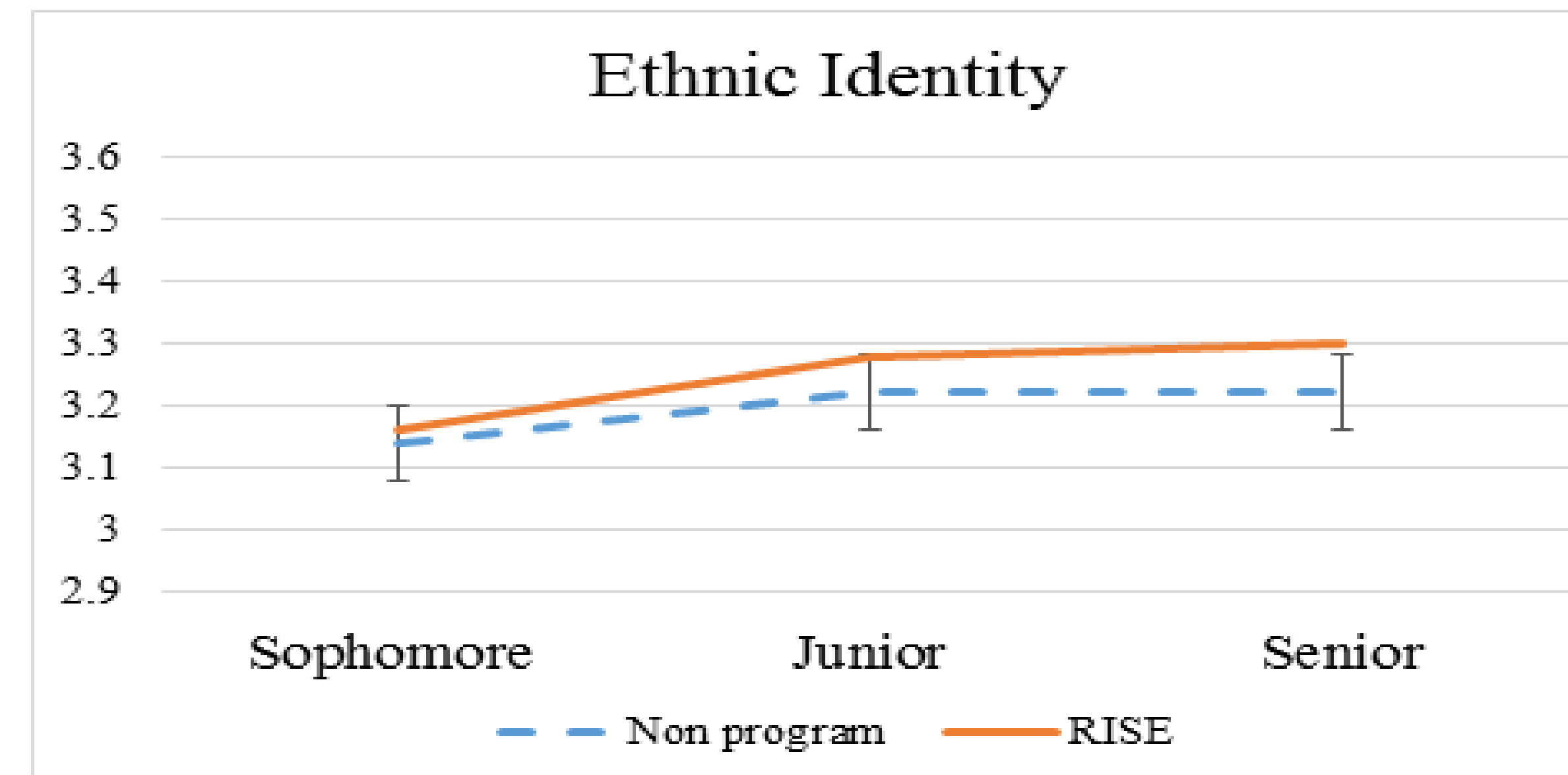
## HYPOTHESES

- We hypothesize that training programs may promote compatibility between students’ racial/ethnic identity and science identity.
- **Science Identity:** Will increase for the students in the RISE program but not for the students who are not enrolled in a minority training program.
- **Ethnic Identity:** Will increase for both, the students in the RISE program and for students who are not enrolled in a minority training program as the shy away from science.
- **Identity Integration:** Will increase for the students in the RISE program but not for the students who are not enrolled in a minority training program.
- **Intention to Pursue a Scientific Research Career:** Students in the RISE program will maintain their intentions, but the non-program group will show a decrease in intentions to pursue a scientific research career.

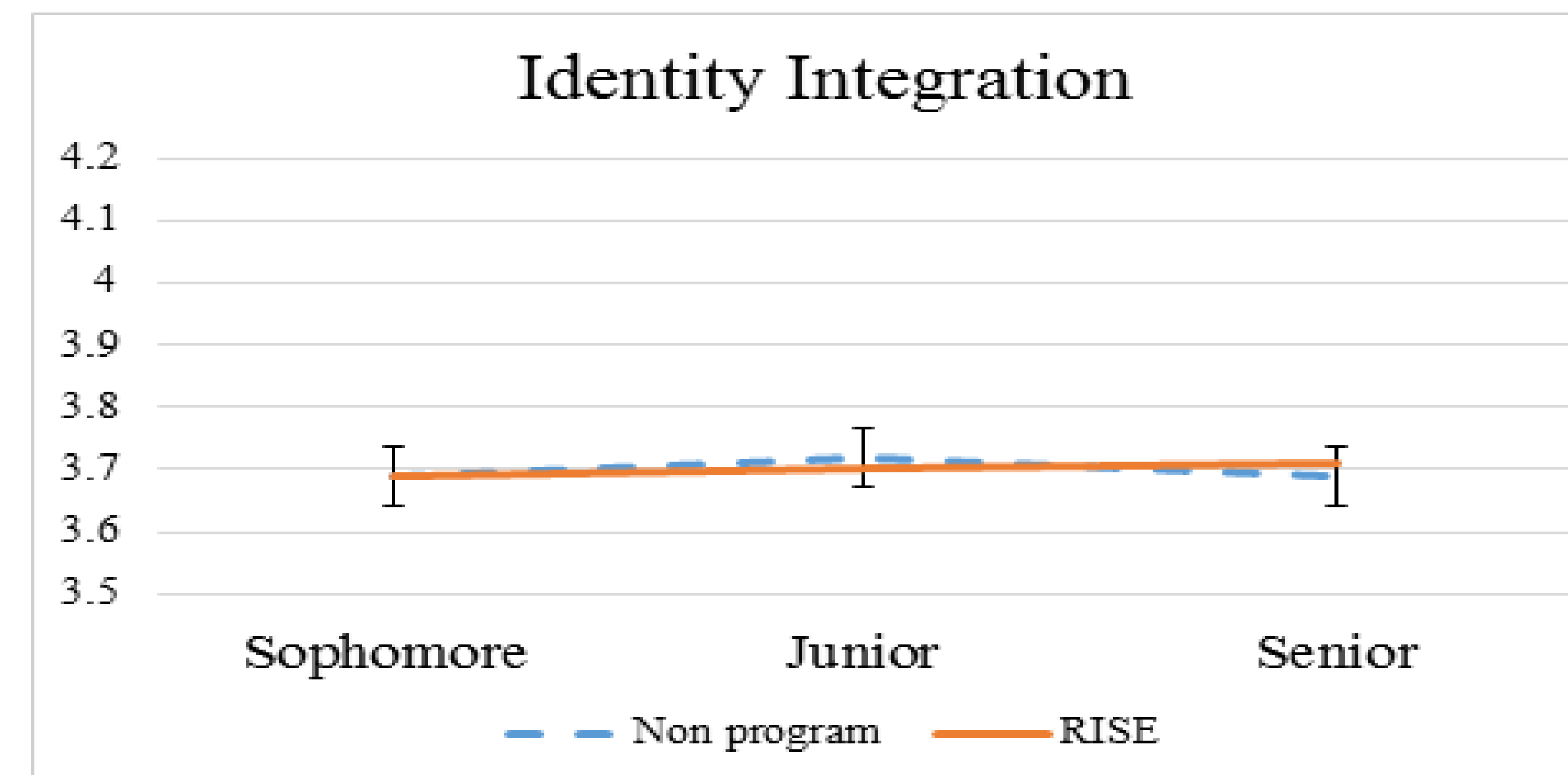
## RESULTS



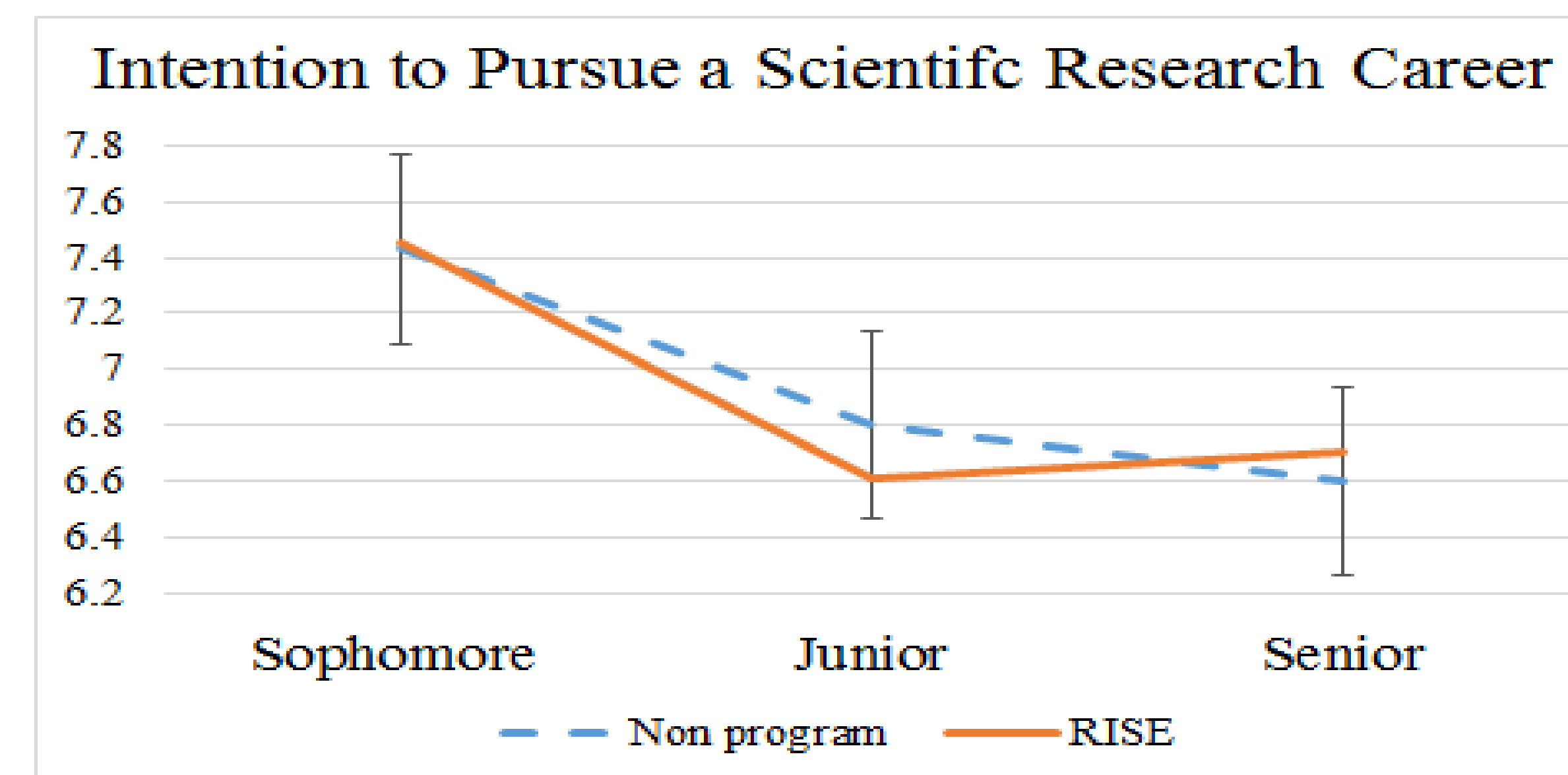
Note: Error bars represent 95% confidence intervals around the means of the non-program group  
Sophomores ( $p = .97$ ), Juniors ( $p = .14$ ), Seniors ( $p = .03$ )



Note: Error bars represent 95% confidence intervals around the means of the non-program group  
Sophomores ( $p = .46$ ), Juniors ( $p = .05$ ), Seniors ( $p = .07$ )



Note: Error bars represent 95% confidence intervals around the means of the non-program group  
Sophomores ( $p = .42$ ), Juniors ( $p = .36$ ), Seniors ( $p = .73$ )



Note: Error bars represent 95% confidence intervals around the means of the non-program group  
Sophomores ( $p = .85$ ), Juniors ( $p = .38$ ), Seniors ( $p = .64$ )

## METHOD

### Participants & Procedure

- Participants were drawn from *TheScienceStudy*; a prospective longitudinal study of 1,420 underrepresented, predominantly African American and Latino(a), science students recruited from 50 colleges and universities across the U.S. (visit [www.thesciencestudy.com](http://www.thesciencestudy.com) for more information).
- 218 participants enrolled in the RISE program as an undergraduate
- A propensity score matched panel of participants not enrolled in any minority training program ( $n = 218$ ).
- 60.1% African American/Black, 39.9% Hispanic/Latino(a)
- 75.9% female
- Mean age at Junior year: 21.47
- Completed online surveys in their Sophomore, Junior, & Senior year
- Major field of study: Social and Behavioral Sciences (8.2%), Natural Sciences (20.2%), Biological Sciences (66.5%), Math, Engineering, and Computer Science (5.1%)

### Measures

- Science Identity ( $\alpha = .95$ ), Ethnic Identity ( $\alpha = .91$ ), Identity Integration ( $\alpha = .75$ ), and Intentions to pursue a scientific research career ( $\alpha = .92$ )

## DISCUSSION

At Sophomore year, there is no difference between RISE and non-program students across all measures. At Junior year, RISE students show a stronger Ethnic Identity than non-program students. At Senior year, RISE students show a stronger Science Identity and Ethnic Identity than non-program students.

## References

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