

# THE ACE MENTOR PROGRAM MAKES A DIFFERENCE TO

- Students
- High Schools and Colleges
- The Design and Construction Industry
- Employers

Recent research continues to confirm that ACE motivates students to study in high school, enter college, and pursue careers in architecture, construction, and engineering.



ACE also helps increase diversity in the design and construction industry's future workforce.



**ACE MENTOR PROGRAM**  
ARCHITECTURE • CONSTRUCTION • ENGINEERING

# Research Overview

The ACE Mentor Program's mission is to engage, excite and enlighten high school students to pursue careers in architecture, construction, and engineering. One critical aspect of achieving this goal is to appeal to, and mentor, minority and female students.

ACE conducted two major surveys in May 2015 to learn about ACE's impact on students, as well as alumni of the program. Those findings make up this report.

All high school seniors who completed ACE in 2015 – nearly 2,000 students – received a survey and 59% responded. Margin of error:  $\pm 1.8\%$ , with a confidence interval of 95%.

Also, a survey was emailed to over 3,000 alumni who completed the ACE program in 2013 and 2014. The completion rate was 29% – nearly 900 responded. This survey's margin of error is  $\pm 2.8\%$ , with a confidence interval of 95%.

The research indicates that ACE is not only accomplishing its mission, it's also helping to advance additional objectives, as highlighted within.

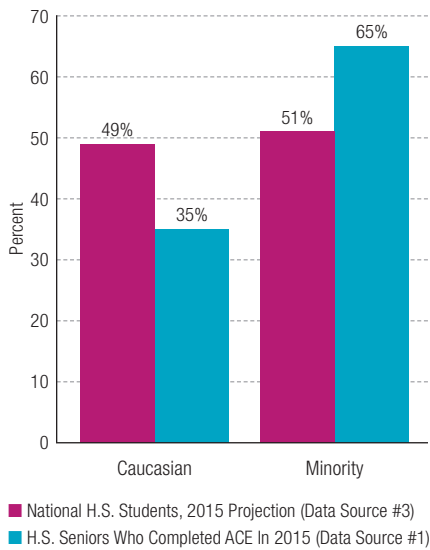
“ I felt more confident when I entered college studying architecture and knew a lot of technical information others did not. I thought of things and analyzed concepts in more in-depth ways also. ”



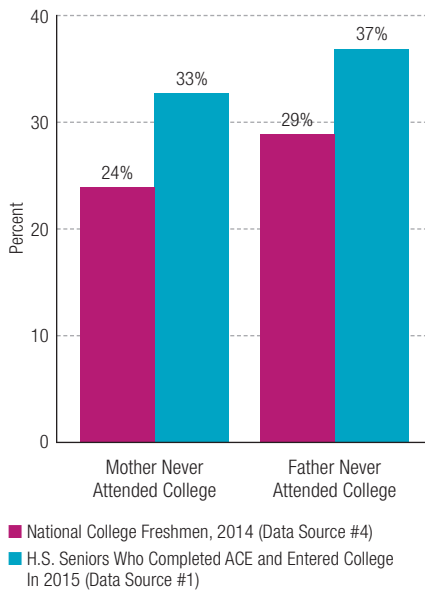
“ ACE has motivated me to pursue mechanical engineering and inspire other inner city teenagers. ”

# 1

## The Large Majority (65%) of ACE Students in 2014-15 Were Minority



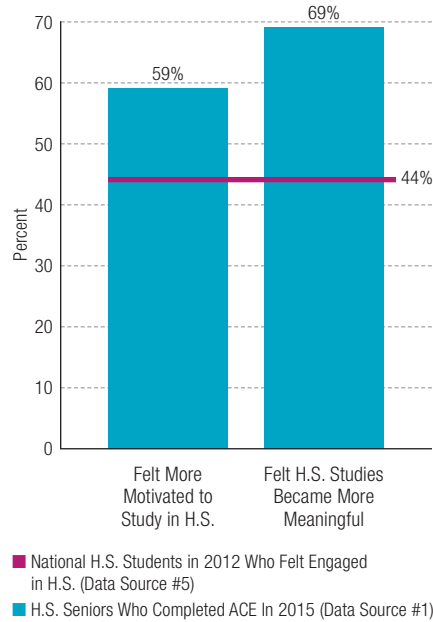
## Proportionately More ACE Students are "First-Generation"\* College Freshmen



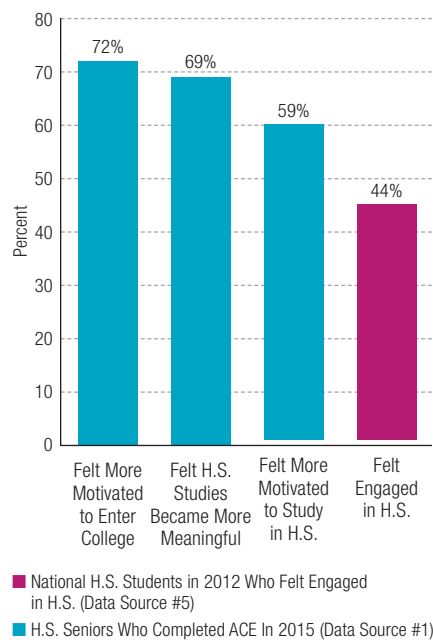
\* As defined by either Mother or Father not having attended college.

# 2

## ACE Motivates Students to Study in High School and Enhances Impact of High School Studies

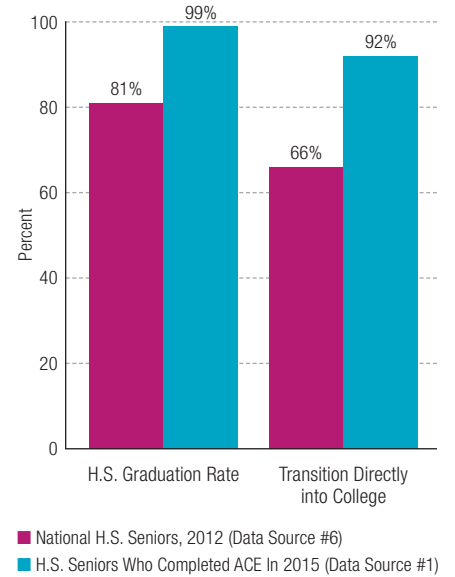


## ACE Gives Students a Greater Sense of Engagement in High School and Increases Their Motivation to Enter College



# 3

## ACE Students Graduate High School and Transition Directly into College at Much Higher Rates



“ACE has changed my life and given me amazing career connections.”



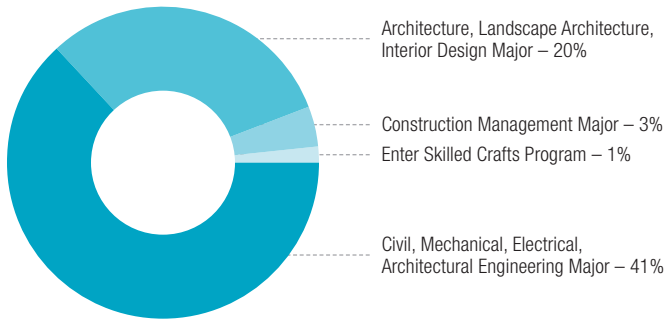
The ACE data cited in this report are derived from two major surveys conducted by ACE in May 2015:

1. High school seniors who completed ACE in 2015 (n=1,960). Fifty-nine percent (59%) responded. The margin of error is  $\pm 1.8\%$ , with a confidence interval of 95%.
2. Alumni who completed the ACE program in 2013 and 2014. This survey was distributed to 3,022 individuals for whom ACE has current email addresses. 29% (879) responded. This survey's margin of error is  $\pm 2.8\%$ , with a confidence interval of 95%.

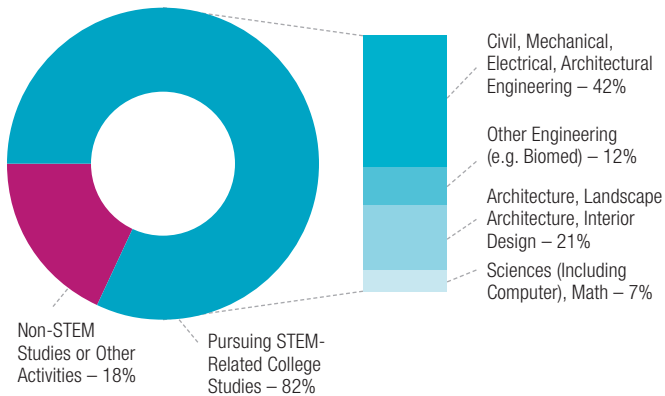
“ACE helped me gain skills necessary to obtain a civil engineering degree and develop a network with industry professionals.”

# 4

## Nearly Two-Thirds of Seniors Completing ACE in 2015 Entered College Intending to Major in Industry-Related Fields

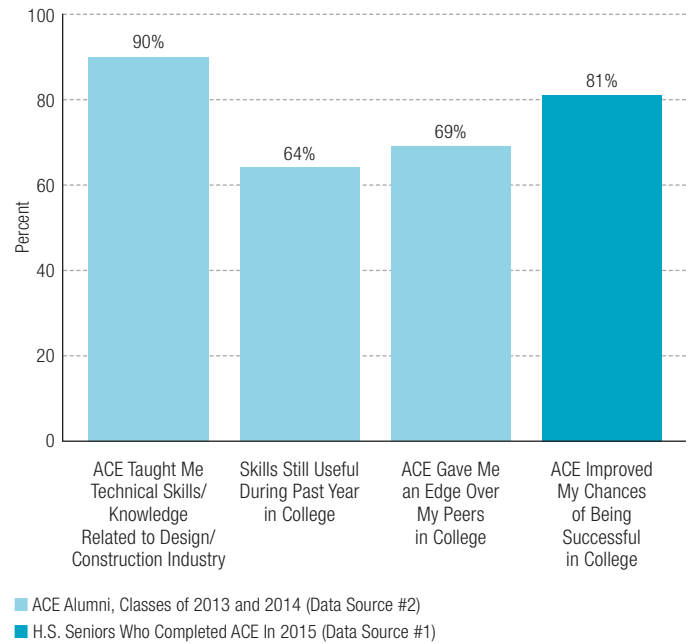


## Four-Out-of-Five Seniors Completing ACE in 2015 Entered College Intending to Major in a STEM Field



# 5

## Alumni and High School Students Feel ACE Helps Prepare Them for College and Improve Their Chances of Success in College



The vast majority (81%) of 2015 ACE seniors completing the program agree ACE improved their chances of being successful in college. More than two-thirds (69%) of ACE alumni believe their ACE experience gave them an edge over their peers in college.



### The sources of comparative national data are:

- U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 2014*, Table 203.50.
- Higher Education Research Institute, University of California at Los Angeles, *2014 CIRP Freshman Survey*.\*
- Valerie J. Calderon, Ph.D., Gallup Student Poll, Fall 2013, "Creating Hope, Building Engagement, and Boosting Wellbeing in America's Schools," [www.gallup.com/sorry/strategicconsulting/164354/gallup-education-consortium-student-poll-presentation.aspx](http://www.gallup.com/sorry/strategicconsulting/164354/gallup-education-consortium-student-poll-presentation.aspx) accessed 1/15/15.

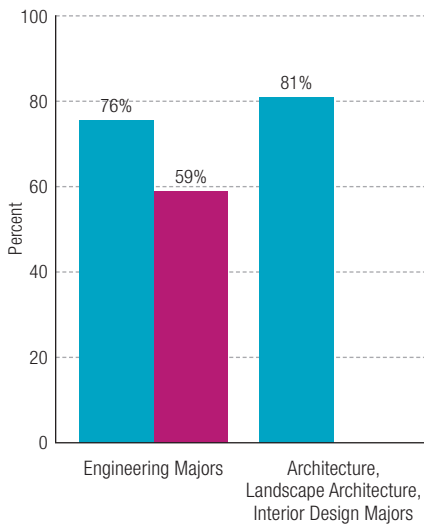
- Digest of Education Statistics 2013*, Table 219.10.
- Digest of Education Statistics 2014*, Table 302.10.
- Xianglei Chen and Matthew Soldner, "STEM Attrition, College Students' Paths Into and Out of STEM Fields," U.S. Department of Education, National Center for Education Statistics, 2013. <http://nces.ed.gov/pubs2014/2014001rev.pdf> accessed 9/21/15.

\* The study incorporated responses from 153,015 first-time, full-time students beginning their studies at 227 four-year

colleges and universities of varying levels of selectivity and type in the U.S. The data was statistically weighted to reflect the approximately 1.6 million first-time, full-time students entering 1,583 four-year colleges and universities across the country in 2014. Since 1966, the first year the survey was conducted, more than 15 million students at 1,900 colleges and universities have completed CIRP surveys. The CIRP Freshman Survey is the largest and longest-running survey of American college students, and the 2015 administration will mark its 50th year.

# 6

## ACE Alumni Majoring in Engineering and Architecture Have High Retention Rates in Those Majors



■ National College Students, Major Continuation Rate Between 1st and 4th Years, 2003-2009 (Data Source #8)  
 ■ ACE Alumni Classes of 2013 + 2014, Major Continuation Rate Between 1st and 3rd Years of College (Data Source #2)

ACE alumni stick with their engineering and architecture majors at high rates between their freshman and junior years college.

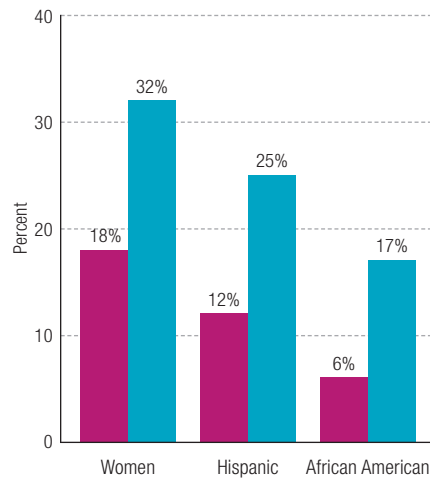
In engineering, which has suffered from a high dropout rate, more than three-quarters (76%) of ACE alumni continue in their majors, compared to a national rate of 59%. (No comparative national data is available for architecture majors.)

“The teamwork and presentation skills used in ACE will help me throughout my life. I met mentors who helped me finalize my decision to major in engineering.”

# 7

## ACE Increases Diversity in Architecture and Engineering

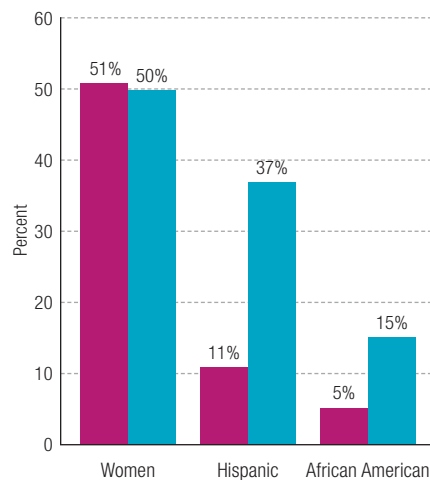
### Civil/Mechanical/Electrical Engineering



■ National Freshmen, 2014 (Data Source #4)  
 ■ ACE Seniors Entering College, 2015 (Data Source #1)

The percentages of ACE women and minorities planning to study civil/mechanical/electrical engineering in college are double national rates.

### Architecture/Landscape Architecture

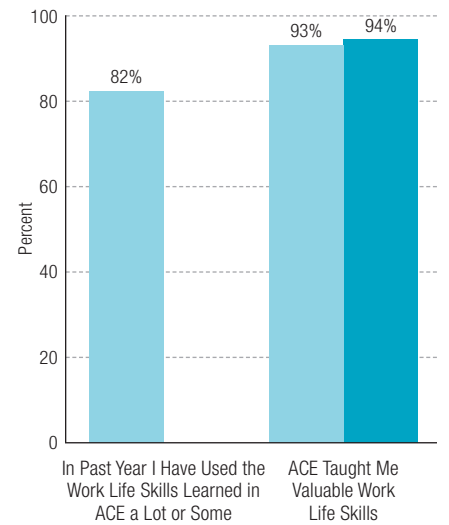


■ National Freshmen, 2014 (Data Source #4)  
 ■ ACE Seniors Entering College, 2015 (Data Source #1)

The percentages of Hispanic and African American ACE seniors intending to major in architecture and landscape architecture in college are more than triple the national rate. The rates of ACE and national freshmen women planning to major in architecture and landscape architecture are equal.

# 8

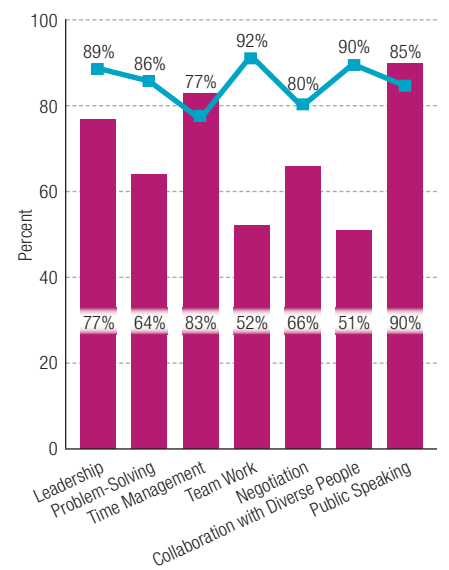
## ACE Develops 21<sup>st</sup>-Century Work Life Skills Prized by Employers



■ ACE Alumni, Classes of 2013 +2014 (Data Source #2)  
 ■ H.S. Seniors Who Completed ACE in 2015 (Data Source #1)

90%+ of ACE students and alumni agree they gained valuable work life skills such as leadership, team work, negotiation, and public speaking during their ACE experience.

Four-out-of-five (82%) alumni report they have used the work life skills learned in ACE a lot or some during the preceding year in college.



■ % of 2014 National Freshmen Majoring in A-E-C Who Deem Their Skill Weak (Data Source #4)  
 ■ % of 2015 ACE Seniors Majoring in A-E-C Who Agree ACE Improved Their Skill (Data Source #1)

ACE strengthens many of the skills with which national college freshmen indicate some weakness.

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The ACE Mentor Program is a unique national partnership among design and construction industry companies and professionals who work together to attract young people into the industry. These professionals include architects, landscape architects, and interior designers; civil, mechanical, and electrical engineers; construction managers; skilled crafts professionals; and representatives from related corporations and organizations.

Roughly 2,900 volunteer professionals mentor and lead high school students through a hands-on, 15-session (2 hours each) program simulating the work of architects, engineers, and construction professionals. This experience inspires students to pursue industry-related studies and careers.

ACE's 60-plus affiliates operate in over 30 states, the District of Columbia, and Puerto Rico. ACE annually engages over 8,000 students in its after-school program, without charge. Since its start in 1994, ACE has awarded \$14 million in scholarships to help students advance through college and skilled crafts programs.

The ACE national program and its affiliates have earned numerous national, state, and local honors, including the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring and the American Institute of Architects Collaborative Achievement Award

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