

RESEARCH BRIEF

HIGHER EDUCATION RESEARCH INSTITUTE AT UCLA



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2016 COLLEGE SENIOR SURVEY

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The Cooperative Institutional Research Program (CIRP) has administered the College Senior Survey since 1993; this year marked the 24th administration of the survey. This brief highlights data from 19,768 seniors graduating from 79 four-year colleges and universities across the United States. Below are findings about their learning experiences outside the physical classroom, confidence in science and research environments, leadership goals, and plans after graduation.

LEARNING OUTSIDE THE CLASSROOM

Distance and online learning have become increasingly popular as institutions can reach more students outside the traditional classroom setting. Many undergraduates take advantage of online courses to fulfill their requirements; in fact, four out of ten (41.0%) seniors had taken an online course while in college. However, participation in online courses varies across majors. For example, those who majored in health professions were among the most likely to take a course online (57.1%), followed by business (50.8%) and education (46.2%) majors. Students who majored in physical sciences (19.3%) and mathematics/statistics (26.7%) were among the least likely to take a course online in college, suggesting either courses in those fields were less likely to be available or that students prefer more faculty and classroom interaction in these disciplines. Additionally, students who did not take an online course were more likely to struggle to get the courses they needed. About six out of ten (60.9%) of those who "frequently" or "occasionally" had trouble enrolling in required courses did not take an online class.

Online courses are not the only way students can learn beyond classroom walls. About a third (33.9%) of seniors took advantage of language and cultural immersion opportunities by studying abroad. Most institutions offer or partner with short- and/or long-term study abroad programs to provide students with these opportunities to learn cultures, languages, and histories around the globe. A twelve percentage-point gap separated the participation of women and men in such programs; women were much more likely than men to participate in such programs, 38.0% compared to 26.3%, respectively. Furthermore, White (35.8%) and Asian (33.9%) students were also more likely to study abroad compared to students who identified as Latino (24.9%) or Black/African American (20.1%). However, despite the low Latino participation numbers, research has

shown that Latino students are just as interested in studying abroad as White students, calling for these programs to be more inclusive and accessible (Ramirez & Bates, 2016). As graduating seniors live and work in an increasingly global society, it is important that opportunities such as study abroad programs, which can provide valuable intercultural experiences, are accessible and scholarships or aid are available to help support participation.

Many students (67.5%) wrap up their undergraduate education by completing a culminating experience such as a capstone course/project, thesis, or comprehensive exam. Students who had taken an honors course while in college were more likely to have completed a culminating experience. In fact, eight out of ten (80.0%) students who took an honors course also completed a culminating experience; this is about fifteen percentage points higher compared to students who did not take an honors course (64.3%). Students who have higher degree aspirations are also more likely to have completed a culminating experience for their degree. While 65.0% of seniors who plan on stopping at their bachelor's degree engaged in such an experience, 68.3% of those who plan on getting a master's degree and 75.5% of students who reported aspirations for a Ph.D. or Ed.D. did so, indicating such projects may facilitate preparation for graduate school. Furthermore, seniors who completed a culminating experience, compared to those who did not, were more likely

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to "strongly agree" that their college or university had prepared them for graduate or advanced education - 40.9% compared to 32.3%, respectively.

Students also spent time outside the classroom working on research projects with their professors. Over two-thirds (68.7%) of students reported that they either "frequently" or "occasionally" had an opportunity to engage in research with faculty. Nearly a quarter (22.0%) worked on a professor's research project for four months or more. Working for extended periods of time on research projects can foster mentoring relationships between faculty and students which in turn can be instrumental in students' success in college and beyond. CIRP's faculty mentorship construct measures the extent to which these relationships are developed, and faculty provide emotional support and encouragement, guidance, and help in achieving professional goals, among other forms of support. These data show that over half the students (55.2%) who worked four months or more on a research project scored high on the faculty mentorship construct, over a third (38.0%) scored average (1/2 standard deviation above or below the mean), and very few (only 6.8%) scored low suggesting that academic engagement outside the classroom can cultivate environments in which students are more likely to receive guidance and support from their professors in college.

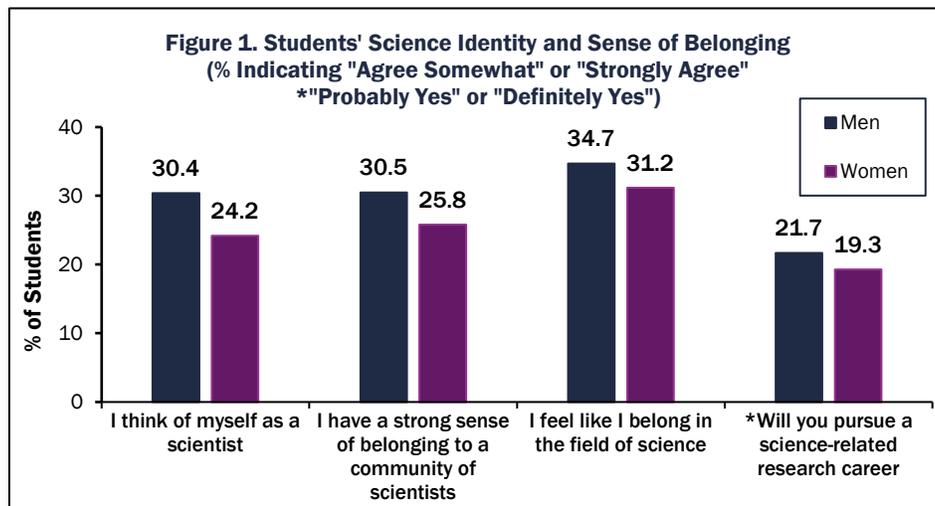
SCIENCE AND RESEARCH SKILLS

The 2016 CIRP College Senior Survey added new sets of questions asking students about their relationship with science, likelihood of pursuing a science-related career, and confidence in their science and research-related skills. Just over a quarter of students reported that they think of themselves as a scientist (26.4%) or feel as though they have a strong sense of belonging to a community of scientists (27.5%) and about a third (32.4%) feel as though they belong in the field of science. However, only about a fifth (20.2%) of seniors reported that they plan on pursuing a career in the sciences. Moreover, only about half (51.2%) of those students who feel as though they belong in the field of science actually plan on pursuing a science-related career, highlighting a problematic gap between students' desires to engage in the sciences and pathways to corresponding careers.

Women have long been underrepresented in STEM majors and careers, and when looking at seniors' relationship with science it is evident that this gender gap persists. As shown in Figure 1, women are less likely to think of themselves as scientists or to feel as though they belong to a community of scientists, with 6.2 and 4.7 percentage-point gaps, respectively. But this gender gap tightens slightly when asked if they feel as though they belong in the field of science (a 3.5 percentage-point gap) or will pursue a science-related

career (only a 2.4 percentage-point gap). This suggests that although women are less likely to feel a sense of identity and belonging to the science community, indicative of a male-dominated culture, they still desire to engage in science almost as much as their male peers.

When students were asked about their confidence in various scientific and research skills, roughly half of seniors were sure of themselves. Fifty percent of students said that they were "very" or "absolutely" confident that they understood scientific concepts (50.0%) and could use



scientific literature to guide research. Slightly fewer, about 45%, reported the same level of confidence in using technical science skills (such as tools, instruments, or techniques) (45.1%) or see connections between different areas of science and mathematics (44.7%). While confidence in science-specific skills hovered around half, more students were likely to be comfortable with general research skills. Just over six out of ten students said they were either "very" or "absolutely" confident that they could identify what is known and not known about a problem (64.5%) or that they could explain the results of a study to someone else (61.7%). And almost as many expressed the same confidence in being able to generate a research question (56.2%), determine how to collect appropriate data (56.8%), or integrate results from multiple studies (57.5%).

Similar to the findings on students' science identity and sense of belonging, there was a definite gender gap when looking at science skills with men consistently rating themselves higher than women. The most noticeable differences being in students feeling confident in using technical science skills (53.0% of men compared to 40.8% of women, a twelve percentage-point gap) and in their abilities to see connections between different areas of science and mathematics (51.7% compared to 40.8%; about an eleven percentage-point difference). The gap disappears, however, when seniors reported their confidence in being able to use scientific literature to guide research, with half of both men (50.6%) and women (50.7%) being either "very" or "absolutely" sure that they could do so. As Table 1 shows, men and women also come much closer to parity when it comes to confidence in general research skills, especially in

being able to generate a research question and integrating results from multiple studies. However, men are still more sure of themselves than women when determining how to collect appropriate data (60.1% compared to 55.0%, respectively) and explaining the results of a study (65.2% compared to 59.7%, respectively).

quarter (24.9%) of women reported leadership potential as “essential” in their future careers.

PREPARING FOR THEIR CAREERS

Senior year caps off years of academic and social experiences which have helped students grow throughout college. It is also the start of big changes waiting just around the corner. Three-quarters (74.7%) of seniors embraced this transition of leaving college by reporting that they are planning on working full-time in the fall of 2016, following graduation. Of these students with intentions of entering the workforce full-time, four out of ten (40.9%) have either accepted (29.9%) or are considering (11.0%) an offer of employment. When looking more closely at these students, however, a gender gap becomes apparent. The

Table 1. Students’ Confidence in Science and Research Skills, by Gender

Science/Research Skill	% “Very” or “Absolutely” Confident	
	Men	Women
Determine how to collect appropriate data	60.1	55.0
Explain the results of a study	65.2	59.7
Generate a research question	56.7	55.9
Integrate results from multiple studies	57.9	57.3
See connections between areas of science & mathematics	51.7	40.8
Understand scientific concepts	55.0	47.3
Use scientific literature to guide research	50.6	50.7
Use technical science skills	53.0	40.8

FOCUSED ON LEADERSHIP

Since starting college, at least half of seniors have had some leadership experience. In fact, 56.6% of students reported that they have been a leader in an organization. Even more students (76.0%) “agreed” or “strongly agreed” that they had effectively led a group to a common purpose. Given that so many students have had leadership experience, it is no surprise that most of the graduating class of 2016 reported that they are very confident in their leadership abilities, with seven out of ten (69.8%) rating themselves as either “above average” or in the “highest 10%.” However, only about a quarter (25.5%) rated themselves in the top category. Although considerably fewer participated in leadership training (40.2%), those who did were more likely to rate themselves as having strong leadership abilities. Of the students who had such training, more than eight out of ten (82.9%) rated themselves as either “above average” or in the “highest 10%,” with 35.1% in the top category. This is significantly higher than the 18.9% of students who did not participate in training, but still rated themselves in the “highest 10%” in their leadership abilities.

Looking forward, seniors are prioritizing leadership in their future. About half of students (49.9%) reported that becoming a community leader is a “very important” or “essential” life goal. And with graduation on the horizon, seniors are not just pondering life goals but also career goals. When deciding their career paths, most graduating seniors (71.0%) consider leadership potential an important quality in a career – just over a quarter (26.7%) said that leadership potential is an “essential” factor when weighing a career, and 44.3% said it is “very important.” Furthermore, while there were no significant differences between men and women wanting to become community leaders, men were more likely to prioritize leadership potential in their careers. About three out of ten (29.8%) of men compared to about a

percentage of men who had accepted or are considering a job offer was over seven (7.5) percentage points higher than women (45.7% compared to 38.2%, respectively) signaling that women may have to compete not only for equal pay and benefits, but also to gain entrance into the job market. Additionally, gaps by students’ race/ethnicity were evident when examining seniors who plan to work full-time. While about four out of ten White (42.7%) and Asian (39.5%) seniors have either accepted or are considering an offer of employment, significantly fewer (34.3%) Black/African American and Latino students reported such successes. And while the national unemployment rate has dropped considerably since these students entered college, hovering around 5% at the time of their graduation, almost half (47.1%) of the seniors who desire full-time work and are looking, have yet to secure employment.

Many students are looking to further their education through various graduate or professional school programs. About ten percent (9.8%) of seniors plan to attend graduate school in the fall of 2016. Out of these students who are pursuing an advanced degree, almost six out ten (58.3%) have been accepted into a program for the fall term, another 14.4% are still awaiting responses, and just as many (14.2%) plan on applying to a program in the fall. Although men were more likely to secure employment, women reported more success in their applications to graduate and professional programs. About sixty percent (59.6%) of women compared to 55.9% of men who plan on attending graduate school full-time had already been accepted for fall admission.

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Most seniors felt as though their college/university contributed to their preparedness for either employment after graduation (86.5%) or graduate school attendance (88.4%), with well over a third "agreeing strongly" (36.3% and 38.2%, respectively). While significant differences were not found between men and women in feeling as though their institution contributed to their preparedness, there were differences by race/ethnicity. White students were most likely to "agree strongly" that their college contributed to their preparation for employment (37.8%) or graduate school (39.6%), followed by Black/African American (35.6% and 38.3%), Latino (33.2% and 32.9%), and Asian students (28.7% and 30.1%). Although seniors responded positively overall, it is evident that not all students strongly believe in their institutions' contributions to their future endeavors, especially Latino and Asian students.

FINANCIAL CONCERNS OF THE CLASS OF 2016

When this graduating class entered college in 2012, they were reported to have prioritized career and financial prospects as reasons for attending college more so than previous cohorts, with 87.9% attending to get a better job, 74.6% wanting to make more money, and 81.0% considering being very well off financially as a "very important" or "essential" goal (Pryor et al., 2012). Having just experienced one of the greatest recessions in American history, it is understandable that these students were entering college looking for a stable future. The CSS followed up on 10,258 students from the 2012 Freshman Survey, and while these seniors are graduating as the economy recovers, the impact of the recession is evident. The following are findings from this longitudinal sample.

Of the students who stated being well off financially was a "very important" or "essential" goal as an incoming freshman, 77.0% reported the same level of importance as a senior. Moreover, 58.9% of graduating seniors indicated that high income potential was a "very important" or "essential" factor when making career decisions. Some of this

prioritization of finances may be a response to the amount of debt that these students have incurred during college. A quarter (25.0%) of students reported owing \$15,000 or more in student loans at the time of graduation, with another 21.8% owing between \$6,000 and \$14,999.

These data from the CSS have shown that graduates of the class of 2016 have had diverse learning experiences in college and are ready to be our future leaders. And although the economy is on a relative upswing, their college experiences and future career decisions have been impacted by the recession, as shown by their student loan debt and desires for financially stable careers.

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The Higher Education Research Institute

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HERI administers the national Cooperative Institutional Research Program (CIRP) surveys, including the CIRP Freshman Survey, Your First College Year survey, Diverse Learning Environments survey, College Senior Survey and the triennial HERI Faculty Survey. CIRP has collected data on over 15 million college students from more than 1,900 colleges and universities since 1966.

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