

Research Article

Outstanding Seniors: Where Have All the Young Men Gone?

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Abstract

The gender gap reversal in higher education, first noted in the early 1980s, has evolved into an educational policy issue due to its persistence. We explore the gender gap among outstanding graduating seniors within a college of agriculture and life sciences. Our investigation found a predominance of female outstanding seniors in the college, including in STEM-like, male-dominated academic majors. We attribute this significant gender gap to national behavioral trends (e.g., male disadvantages in non-cognitive skills) and to organizational changes within the college.

Do we in higher education care about the gender imbalance? So far, the answer is probably not.

(Mortensen 1999, 16)

The rise of women, however long overdue, does not require the fall of men.

(Sommers 2013a)

1 Introduction

Historically, a gender gap reflected the perceived or actual advantage men had over women in education, compensation, politics, business, academia, and leadership throughout society. The traditional gender gap has long been the subject of domestic and international analysis, policy prescriptions, and policy interventions. In the United States, feminism, along with a change in societal attitudes, has played a key role in reversing the gender gap by “leveling the playing field” for women through policy and program initiatives. In the case of higher education, efforts to recruit, mentor, recognize, and graduate young women continue to be a core academic value. These efforts have garnered significant organizational time and resources, especially in STEM majors (Kanny et al. 2014; White 1970).

The data on college enrollments and undergraduate graduation rates reveal that women persist, prosper, and perform in higher education to a greater extent than men. In fact, the “historical” gender gap reversed many years ago. Nationally, nearly 60 percent of undergraduate degrees now awarded go to women, a percentage that has remained remarkably stable for nearly four decades (Klevan et al. 2016). This disparity is easily overlooked because of the continued dominance of men in positions of political and economic power in our society (Autor and Wasserman 2013). Yet the current impact of this long-run educational reversal reveals itself in the increasing representation of women in the health fields, government, academia, media, entertainment, and business (Blau et al. 2013). Even previously male-dominated occupations may be becoming predominately female (Pan 2015).

Some analysts view the gender gap reversal positively, suggesting that society gains when men become more like women and women control more levers of power (Valian 1999). Other analysts consider it a “crisis,” a “national scandal,” or a “war” against young men that has important social implications (Sommers 2013b; Farrell and Gray 2018). They contend that the failure of young men to realize their abilities academically, socially, and relationally has an adverse impact on family formation and sustainability, children, social stability (e.g., crime), and economic productivity. As noted by Owens

(2016, 252), “Men’s educational attainment predicts their long-term health and well-being, and their well-being in turn affects that of their children and families.”

Over the last 10 years, the professional literature in economics, sociology, and education has devoted significant attention to the gender gap in higher education. With this research note we intend to go beyond graduation rates as the variable of interest to explore the outstanding senior gender gap, if it exists, among students who are recognized for outstanding performance by departments and colleges. We are unaware of any similar research at the departmental or college level. Students recognized by their departments and a college of agriculture and life sciences is our target. Our objectives are to (1) analyze the outstanding senior data for the 2004 to 2017 academic years at the college and departmental levels and (2) pool our experience to reflect on possible causal factors, both structurally and behaviorally, that may have led undergraduate men to underperform in a college of agriculture.

2 Explaining the Gender Gap Reversal in Higher Education

The gender gap reversal is a global phenomenon. Since the 1940s, both men and women have increased their enrollment in post-secondary education; however, the rate of increase of female enrollment has surpassed that of men, irrespective of ethnicity or socioeconomic status, in almost all OECD countries (Buchman and DiPrete 2006; Goldin et al. 2006). Becker et al. (2010) expanded this research to 120 countries and found that the boom in higher education worldwide is largely due to women. In a majority of the countries studied, women have now surpassed men in university performance. In the case of the United States, several reversals of the gender gap have occurred over the last century (Ball 2012). During the first three decades of the 20th century, men and women were attending colleges and universities at nearly the same rate. But over the next two decades, due to the Great Depression and World War II, the male-to-female enrollment ratio in higher education was 2.3. Following WWII, women began to “catch up” in enrollment and graduation rates, reaching parity in the early 1980s, and now they surpass men in these rates (DiPrete and Buchman 2013).

The relatively lower enrollment, persistence, and performance of men in higher education produce a complex puzzle of causal and predictive factors. Explanations range from empirically based analyses that conclude that men are less socially and academically integrated in college experiences (Ewert 2012) to popular, opinion essays arguing that the increasing presence of women in higher education creates an unwelcoming and high-cost learning environment for men that can be bypassed for a successful career in manufacturing, the military, protective services, construction, and technology (Niemi 2018). We attempt to summarize the findings and conclusions of a sample of the empirically based, large-scale national studies with specific attention to causal factors with statistical significance.

2.1 Lower Net Benefits

The social benefit-cost ratio for an undergraduate education generally is assumed to be significantly greater than one and, therefore, an undergraduate degree is worthy of public support and encouragement. A private benefit-cost ratio guides an individual’s schooling decision and behavior. Under this benefit-cost framework, Becker et al. (2010) discovered that private benefits of higher education accrue equally to men and women on a global scale, *ceteris paribus*. Traditional costs (e.g., tuition, room and board, fees) also are equal. What are not equal are the non-traditional costs that the authors label as non-monetary psychic costs. These costs are lower for women than for men; hence, net benefits attributed to a university degree are lower for men than for women. Goldin et al. (2006) found similar results for college students in the United States.

Why are non-monetary psychic costs lower for female college students than for male college students? Some analysts point to the “non-cognitive skills” or “soft skills” of women. Self-motivation, class attendance, ability to pay attention in class, time management, exam preparation, collaboration, and appropriate behavior in the college environment are easier for women. Females, it is argued, worked harder in high school to earn higher grades, learned a foreign language, became outstanding readers, and

improved their science and math skills while young men did not. Therefore, participation in the academic life of a university represents greater adjustment and effort costs for males, affecting their rates of enrollment, persistence, and graduation. Females more easily navigate university life because of their higher non-cognitive abilities (Conger and Long 2010). Borghan et al. (2006) even provide evidence that points to a female advantage in “people skills” that, in some cases, can lead to a people skills premium in wages.

The net benefit of earning a college degree, often referred to as the college premium, is higher for women than for men (Jacobs 2002; Forling et al. 2015). However, a higher college premium for women does not imply that earnings for college graduates are the same for men and women. Young female graduates face discrimination and bias in hiring on their graduation (Quadlin 2018) and a persistent wage gap once they participate in the workforce (Blau and Kahn 2017). These disadvantages exist at all education levels, widen with age, and extend across the professions. Putting this challenge into context, Carnevale et al. (2018) suggest that women plan to earn an advanced degree so they will earn equivalent earnings to a man with an undergraduate degree.

This “need” to go to graduate school became widespread beginning in 1990. As early as 8th grade, girls may begin planning to attend graduate school in order to meet their career goals, be more competitive in the job market, and bridge the salary gap beyond graduation (Almås et al. 2016; Jensen 2010). Jacobs (2002) found that 80 percent of the gender gap in higher education is explained by more developed non-cognitive skills and higher college premiums for women as they pursue graduate degrees. As a result, women invest more time and money in their schooling than their male peers because their superior academic performance at the undergraduate level is a necessary condition for acceptance into graduate school. In contrast, boys focus on traditional male occupations (e.g., engineering, architecture, military service) that do not often require advanced degrees. Women use advanced higher education as their principal strategy for achieving economic parity (Carnevale et al. 2018).

2.2 Less Social Capital

The strength and breadth of key human relationships, observed as social capital, explains a significant part of the gender differences in college enrollment decisions. Combs et al. (2010) and Klevan et al. (2016) find that young men and women benefit equally from their mutually beneficial relationships but that women have more of these relationships, which they consciously cultivate. This literature identified social capital with peer-to-peer, parent-to-child, parent-to-parent, and student-to-teacher relationships. Female students are more likely to work on academics with their friends, whereas male students focus on non-school activities (e.g., video games). Family structure matters (see below) to college enrollment. The data appear to indicate that parents may have different expectations for boys and girls with respect to college attendance. Researchers have found that students with parent-to-parent social capital (i.e., students with parents who have relationships with other parents of students) are seven times less likely to drop out. Finally, young girls are closer than boys to their teachers; these relationships are academically oriented and benefit young women in their preparation for college. So, as they enter college, young women are more likely to become more socially and academically integrated into the university community (Combs et al. 2010; Klevan et al. 2016).

2.3 Lack of Male Mentorship

The breakdown of the two-parent family over the last 40 years emerges in the gender gap literature as an important explanatory variable. Male role models are extremely important for a boy’s development. Birth outside of marriage, a mother working full time outside the home, or an absent father can turn a young man to unproductive, non-school activities for support and encouragement (Jacobs 2002; Buchmann and DiPrete 2006; Autor and Wasserman 2013). Participation in organized sports fills the need for male mentorship, but only a small percentage of young men participate in athletic activities at either the high school or college (e.g., intramurals, intercollegiate) levels (Ewert 2012).

2.4 Slower Adjustment to a Changing Environment

Young men, on average, have struggled to adjust to a service-producing economy (Mortensen 1999) and to increased urbanization, which heavily relies on communication, cooperation, and social networking—skills that young women, on average, tend to have in greater abundance than their male peers and that are often developed in high school. Mortensen notes that a UCLA survey of college freshman found that college females are more likely to spend their time reading, doing homework, participating in student groups, and doing volunteer work while their male counterparts are exercising, partying, watching television, and playing video games.

Kahn et al. (2011) argue that higher education, as viewed by young men, places too much emphasis on “feminine” activities (e.g., reading, writing, analysis, oral discussion, and debate) while actively downplaying masculine goals of physical work, self-reliance, and competition (i.e., winning). Masculine norms often are challenged in higher education, and many young men are uncomfortable with, or even rebel against, self-evaluation activities. As a result, young men in this “new” environment begin to disengage from their traditional academic, economic, civic, and family roles.

2.5 An Uninviting K–12 Learning Environment

Finally, Mortensen (1999) argues that our primary and secondary schools have failed to create a learning environment that recognizes the needs and learning styles of boys. Owens (2016) argues that a boy’s behavioral problems in kindergarten are a good predictor of the gender gap in education by the age of 26. Young boys have more difficulty self-regulating, paying attention, and demonstrating social competence and as a result, they are more likely to be disciplinary challenges in school. Whereas girls find school environments compatible with who they are, boys do not perceive these environments as welcoming, intellectually stimulating, and socially rewarding. Owens concludes his analysis with the frequently stated claim that many school environments fail to encourage the academic and social success of boys.

But why? Across the board, researchers note that boys have few male role models in school. Three-quarters of the teachers in the K–12 educational system are female and as one researcher observes, these “teachers treat boys different from girls” (Owens 2016). Boys disengage from school as the result of excessive, in their minds, disciplinary actions. In addition, boys often find a lack of cognitive stimulation in the classroom, leading to boredom. Research shows that boys’ motivation to learn also is more negatively impacted than girls’ motivation by family instability and a father’s absence. The female advantage in the school system is so pervasive that schools have become more “feminized” because teachers and administrators promote and reward qualities that are more common to female students than to male students (Tyre 2009).

3 Outstanding Graduating Seniors: A Case Study

University academic units commonly recognize their outstanding graduating senior annually or at each graduation when there is more than one commencement ceremony in the calendar year. Each unit determines its own selection criteria that often include the student’s GPA and extra-curricular activities. The criteria may also include gender, race, age, and family obstacles overcome.

We employ a revelatory case study with an embedded single-case design to analyze the gender ratio of outstanding seniors in the College of Agriculture and Life Sciences at the University of Arizona (CALS/UA) (Yin 2009). With the college and departments as units of analysis, we utilize the archival records of the college’s Office of Career and Academic Services (CAS) for the names of outstanding seniors at the college and departmental levels over the study period: fall semester 2004 to spring semester 2018. CAS staff validated all gender- and outstanding senior-related data. The authors directly observed the outstanding senior recognitions over the study period. We test the hypothesis that the gender ratio of outstanding seniors in the college and departments reflect their enrollment by gender. The case study concludes with our heuristic analysis of the data (Patton 2015).

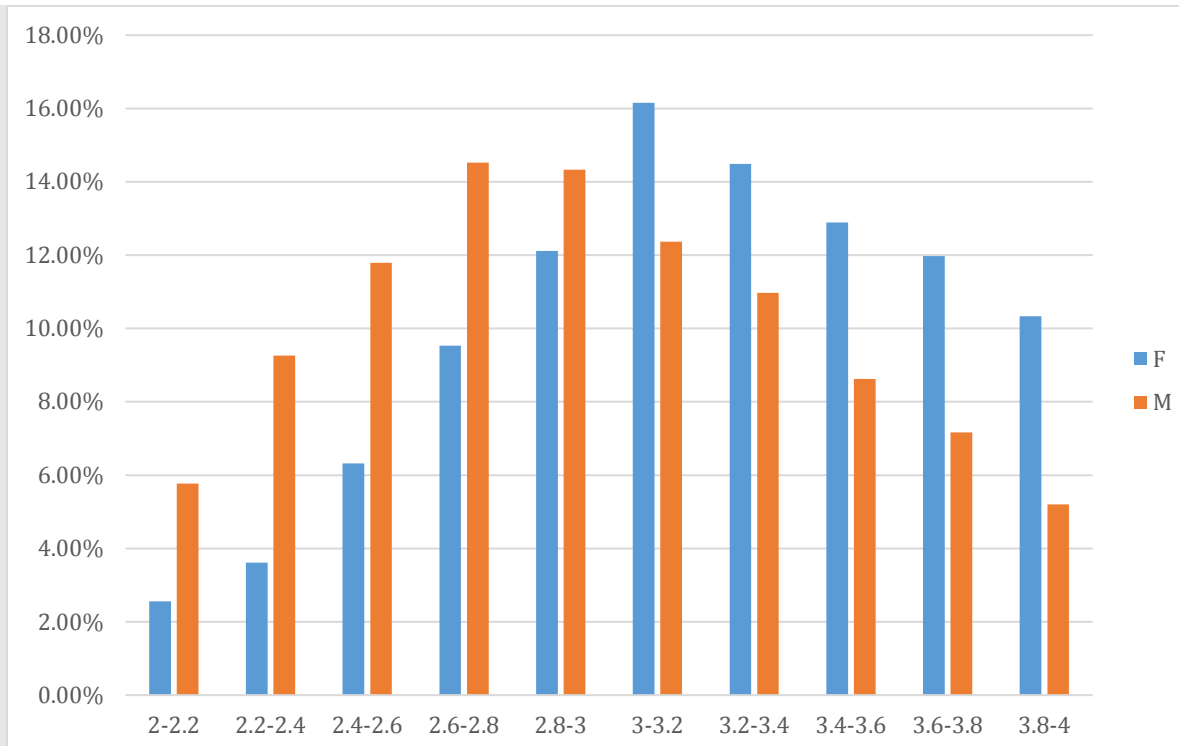


Figure 1. GPA frequency distribution by gender, 2004–2017

CALS/UA represents a wide range of academic majors, from STEM-like fields in physical, biological, and social sciences to agricultural education. Schools of Renewable Natural Resources, Family and Consumer Sciences, and Plant Sciences are within CALS/UA's organizational structure. CALS/UA had 10 academic units that offered 15 undergraduate majors between the 2004–2005 and the 2017–2018 academic years. During this study period, undergraduate enrollments in individual academic units ranged from less than 30 to more than 700, totaling between 2,500 and 3,300 students each academic year. During this period, women graduated with an average GPA of 3.2 compared with 3.0 for men (Figure 1). The female GPA distribution reflected lower GPAs from a higher mean, whereas the male GPA distribution reflected higher GPAs from a lower mean.

CALS/UA recognizes its Outstanding Graduating Senior at graduation ceremonies in December and May. The CALS/UA Outstanding Graduating Senior is selected from the from the academic departments' nominees for the CALS/UA recognition. All outstanding seniors from the departments are recognized at a luncheon at the end of the fall and spring semesters; the Outstanding Graduating Senior for the college is recognized at the December and May graduation ceremonies. The selection criteria for the CALS/UA award are presented in Table 1. In light of the previous discussion, it is noteworthy that 50 percent of the evaluation weight is given to GPA and extra-curricular activities. Individual departments generally follow these same criteria in selecting their outstanding senior, although they may place more weight on GPA than on other criteria. In some semesters, a department may not select or nominate an outstanding graduating senior. The CALS/UA data set represents academic department nominations for the CALS/UA Outstanding Graduating Senior recognition.

Table 1. Selection Criteria for Outstanding Graduating Senior, College of Agriculture and Life Sciences, University of Arizona

I. Mission Statement with Goals (15 points)
 Career, academic, and personal goals (300 words maximum)

II. Academic Program (25 points)
 Cumulative GPA, University of Arizona only (attach current Advisement Report)
 Write an analysis of your academic program, placing emphasis on specific educational endeavors, goals, etc. that also include any internship and/or independent study experiences that have enhanced your academics. (200 words maximum)

III. University, College, Departmental Activities (25 points)

Activity	Dates	Hours Per Semester

IV. Community Activities (15 points)

Activity	Dates	Hours Per Semester

V. Work Experience (15 points)
 Career and non-career related

VI. Recognition, Scholarships, Awards, Honors (5 points)
 College of Agriculture and Life Sciences related
 University of Arizona related
 Other

4 Results

Undergraduate CALS/UA enrollment ranged from 2,500 to 3,300 students during the study period. On average, women made up 70 percent of the student body per year. Even when female-dominant majors like nutritional sciences and family and consumer sciences are removed from the data set, female students accounted for a greater percentage of the CALS/UA student body than the average student body of U.S. colleges and universities.

The gender gap is even greater among outstanding graduating seniors at CALS/UA. During the study period, women made up 80 percent of these seniors, a higher percentage than would be expected with a 30/70 enrollment split. This consistent female dominance, at least in part, can be explained by the non-GPA evaluation criteria presented in Table 1. Female students participate to a greater degree than men in on-campus, extra-curricular activities. Even when a male student has a high GPA, he is not competitive with a female student who has a comparable GPA and who has volunteered for college activities and events while providing leadership in departmental, college, or university clubs or organizations.

Figure 2 captures the dominance of women in outstanding senior recognition across all departments in CALS/UA during the 2004–2017 academic years. In any given year, 59 percent to 87 percent of the outstanding seniors selected by units in the college were women. Although significant variability exists across academic years, the gender gap in departmental outstanding seniors exceeded the college's 30/70 enrollment split in the early years of the study period. Since 2013, that gap has mirrored the enrollment split.

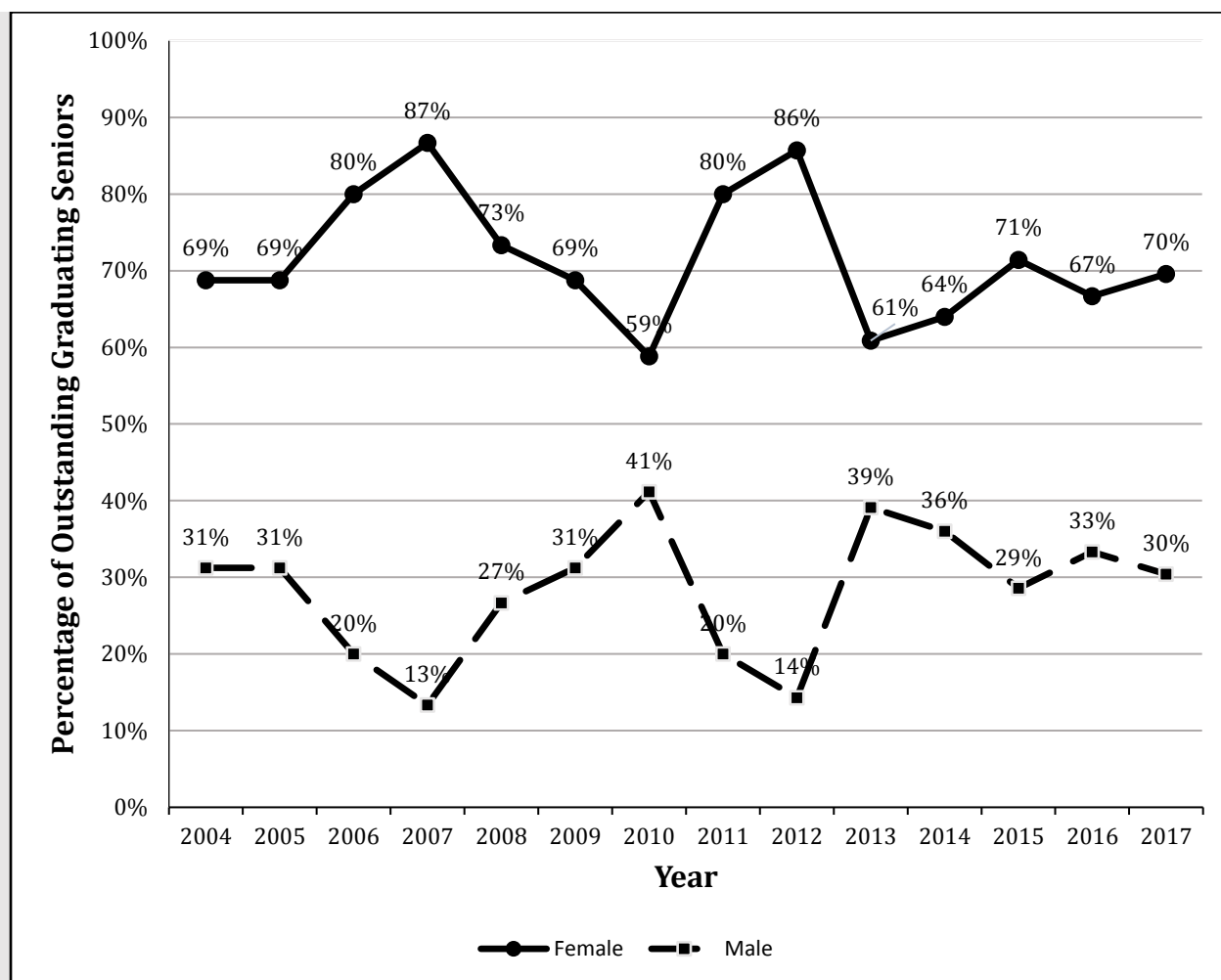


Figure 2. Percentage of outstanding graduating seniors by gender, 2004–2017

Department-level gender gaps are more interesting when each academic unit's gifted seniors are analyzed (Figure 3). In 9 of the 10 departments, the average male outstanding seniors percentage was lower than the average male enrollment percentage. That difference was more than 10 percent in seven departments. As a result, the gender of the outstanding seniors does not reflect the department's undergraduate enrollment during the study period. For example, the Agricultural and Resource Economics Department has an enrollment of 71 percent male and 29 percent female undergraduates. However, the department's outstanding seniors were 47 percent male and 53 percent female. Similar "flipping" occurs in Agricultural Education, Agricultural Engineering, Animal Sciences, School of Natural Resources, and Soil, Water, and Environmental Sciences units. Several of these units offer STEM majors in which outstanding female students are consistently performing at a higher level than their outstanding male peers.

5 An Exploratory Discussion from Inside a College of Agriculture

This case study's descriptive data show a college of agriculture's outstanding senior gender gap but do not point to causality. The following heuristic analysis is based on the university-level teaching, academic advising, club sponsorship, and mentoring experience of two generations of authors—senior (male) and junior (female) faculty—who propose some possible explanations for the persistent gender gap in outstanding seniors. We complement these explanations with our reflections, which are based on our personal experience with the outstanding senior selection process at the departmental and college levels, discussions with students, and conversations with staff.

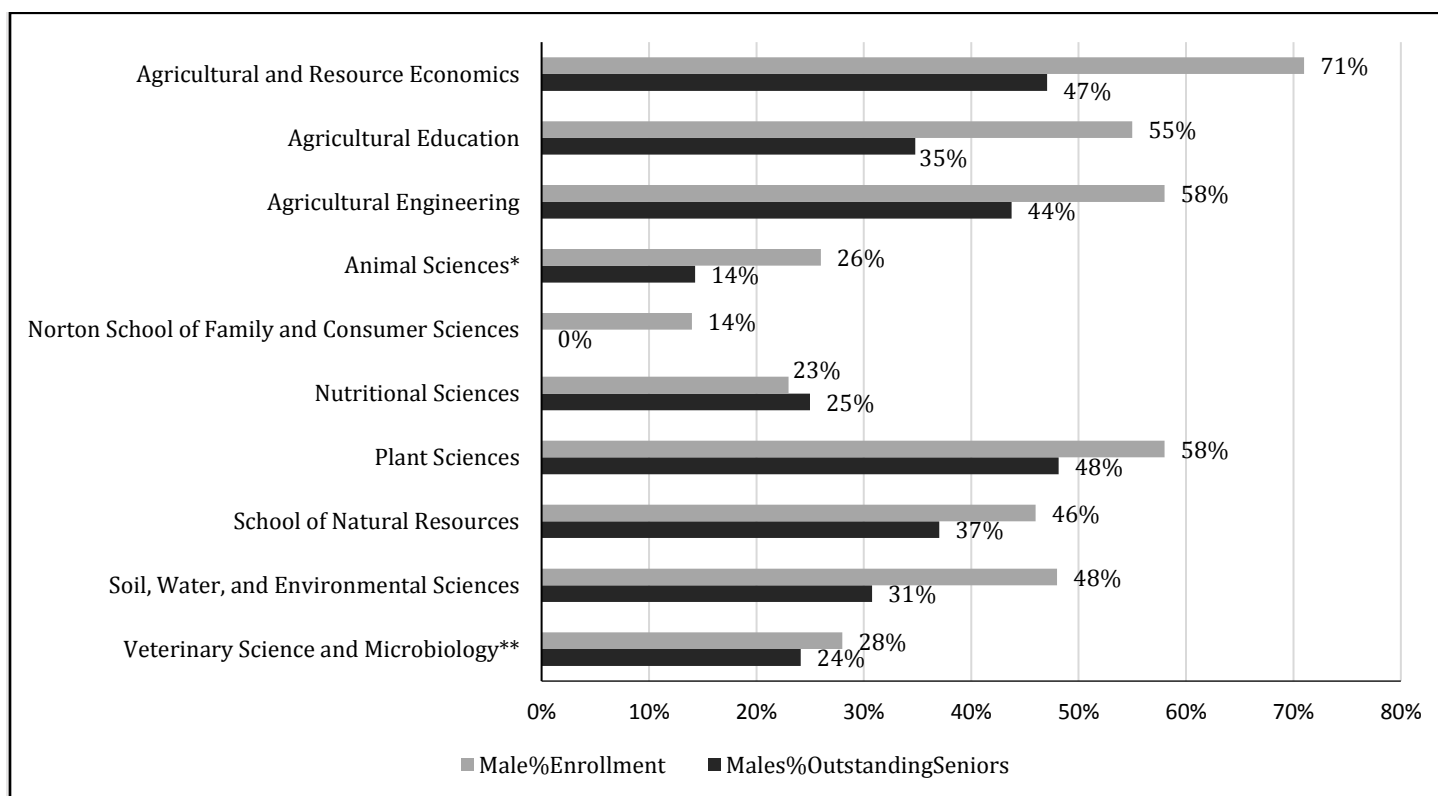


Figure 3. Male enrollment and male outstanding graduating seniors by academic unit, 2004–2017

* Includes Animal Sciences (2004–2017) and Animal and Comparative Biomedical Sciences (ACBS) (2013–2017).

** Data for 2004–2012. Department was combined with Animal Sciences in 2013 to form the ACBS school within CALS/UA.

5.1 Structural Issues

Several structural issues may deter the development of male outstanding seniors.

A Female-Dominated Environment. With female enrollments at the university and college levels of 60 percent and 70 percent, respectively, male undergraduates are in a more female-dominated academic environment than they experienced in K–12 grades. Many have failed to adjust to this new reality. In addition, academic advising is now almost solely the responsibility of female staff. Fifteen years ago, universities began to slowly professionalize academic advising, shifting the responsibility away from faculty and hiring full-time, mostly female, academic advisors. For example, 92 percent of academic advisors in this college are women. Moreover, because female faculty are more likely than male faculty to volunteer to be club advisors and mentors of students, male undergraduates may only interact with a male faculty or staff member in the formal classroom setting several times a week (Strada-Gallup 2018).

STEM Departments Promote Women. Departments are regularly encouraged to promote diversity and inclusion in their units and, historically, that has implied encouraging promising female students in their majors. University administrators track the level of diversity in colleges and departments, monitoring progress toward the university's diversity goals. However, given our data, at least for outstanding senior recognition, greater attention should be directed toward women *and* men.

Incompatible Learning Environments. As noted earlier, men prefer hands-on, real-world learning activities rather the passive, largely abstract lecture format employed in most college classrooms. Efforts are being made to promote participatory learning strategies in the classroom, but do these strategies actually improve male students' performance? Group learning and teaching environments place significant demands on the average male undergraduate's existing and potential social-capital formulation skill.

5.2. Behavioral Issues

Analysis of data sets at the university level shows that many of the causes of the gender gap in higher education are behavioral and that they are well established by the time students graduate from high school. We complement this quantitative analysis with a qualitative analysis built on face-to-face interactions with students. The following reflections represent our understanding of the behavioral challenges facing many young men in a college of agriculture.

Not Masculine. Somewhat surprisingly, some male students express the attitude that being educated is not masculine. Therefore, beginning in their freshman year, they appear to optimize their social life preference function subject to a minimum investment in school activities. Graduation, not outstanding performance, is the goal.

Video Games and the Internet. Discussions with faculty, staff, and other student program personnel suggests that many male undergraduates spend up to five hours a day online, doing potentially unconstructive activities like viewing pornography or playing video games. A campus recruiter asked one graduating senior how he spent his non-classroom time. His forthright response, "I play video games," is not atypical.

Terminal Degree. Incoming male undergraduates are often overconfident in their academic abilities and are unconcerned about finding a good-paying job with benefits on graduation. Some may already have post-graduation job offers not dependent on their academic performance. Sadly, many of these students, after being in the workforce for three years, want to apply for graduate programs with a 2.2 GPA. Male undergraduates, from their freshman year, do not have a long-term view of the value of the educational opportunity presented to them.

Non-Academic Social Capital. Young men, in the university environment, develop valuable social capital, but not in a manner that would allow them to compete for outstanding senior recognition (Table 1). Beneficial social capital, both in the short and long run, is developed and maintained by male undergraduates in fraternities, sports (including sport video games), partying with friends, and just hanging out, or in summer and off-campus employment. The value of on-campus social capital building, either in or out of class, is not viewed as a productive use of their time.

6 Where Do We Go from Here?

Action in four areas will bring the outstanding senior gender gap more in line with college and department enrollments.

First, both male and female faculty should regain a role in undergraduate advising. Over the last 20 years, faculty have been removed from student advising under the assumptions that (1) most faculty do not want to advise undergraduates, (2) when they do advise students they do a poor job, and (3) their time is better spent on grant writing and research. Full-time academic advisors were hired and the student advising system kept faculty from frequent, in-office interaction with students. Those faculty who continued to advise clubs, spend long hours with students, and encourage students to participate in extracurricular activities received little professional reward other than the admiration of their colleagues. The advising system should value the engagement of faculty in student affairs. As one faculty member noted, "My most effective teaching about the major, potential careers and life choices occurred in academic advising sessions."

Second, universities and colleges need to recognize that the quality of the educational experience is often based on on-campus relationships between students and faculty. The once-important educational role of clubs, small specialized classes, and field trips have fallen on hard times with budget cuts, an emphasis on larger classes, and the lack of professional incentive to organize outside-of-class activities. Yet it is in these active learning spaces that young men find motivation for their major and their career and develop social capital with students who are different from them.

Third, faculty need to increase competition and game playing in their classrooms and labs. Resources exist to design collaboratively competitive environments, but they normally make up a small

part of didactic strategy. All faculty need support, including release time, to energize their courses with appropriate learning environments for young men without alienating women.

Finally, to overcome male students' perception that higher education is "boring," faculty must go beyond abstract storytelling to the use of cases, examples, scenarios, and data sets that are current, local, intriguing, and relevant to the topic at hand. Faculty should not underestimate the ability of students to grasp the problem statement, methodological approach, data needs, and results of most research projects when this work is presented in an engaging manner. And they should begin sharing their exciting work with freshman. Doing so may motivate more young men to actively engage in their education and to attain recognition as outstanding seniors at the conclusion of their undergraduate studies.

7 Conclusion

A well-known concern associated with case study research is the reduced opportunity for statistical generalization. However, a case study design is ideal for analytical generalization when theories are expanded. The goal of this paper is to extend the established gender gap literature in higher education to highlight the outstanding senior gender gap at the college and departmental levels. We challenge our colleagues to explore this issue on their campuses or with a national panel data set of departments/colleges in order to statistically test the hypothesis that men are underperforming, relative to their enrollment levels, when it comes to being recognized for overall excellence. Gender disparities may or may not exist in some departments and colleges. We expect that geographic location (e.g., Midwest versus East Coast), urban location (e.g., large city with a university versus a college town), and size of the university (e.g., large research university versus small teaching-centric university) could produce results that differ from those reported in this paper. However, based on our conversations with colleagues from other universities and colleges, we are not dissuaded from raising the gender gap as a valid educational issue. In addition, we are struck by how few faculty members understand the process for selecting outstanding seniors in their departments and colleges and by how few professors know who these exceptional undergraduate students have been.

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References

- Almås, I., A.W. Cappelen, K.G. Salvanes, E. Sorensen and B. Tungodden. 2016. "What Explains the Gender Gap in College Track Dropout? Experimental and Administrative Evidence." *American Economic Review* 106: 296–302.
- Autor, D., and M. Wasserman. 2013. *Wayward Sons: The Emerging Gender Gap in Labor Markets and Education*. Washington, D.C.: Third Way.
- Ball, J.A. 2012. "The Gender Gap in Undergraduate Business Programs in the United States." *Journal of Education for Business* 87: 260–265.
- Becker, G.S., W.H.J. Hubbard, and K.M. Murphy. 2010. "Explaining the Worldwide Boom in Higher Education of Women." *Journal of Human Capital* 4(31): 203–241.
- Blau, F.D., P. Brummund, and A.Y.H. Liu. 2013. "Trends in Occupational Segregation by Gender 1970–2009: Adjusting for the Impact of Changes in the Occupational Coding System." *Demography* 50(2): 471–492.
- Blau, F.D., and L.M. Kahn. 2017. "The Gender Wage Gap: Extent, Trends, and Explanations." *Journal of Economic Literature* 55(3): 789–865.
- Borghans, L., B. Ter Weel, and B.A. Weinberg. 2014. "People Skills and the Labor-Market Outcomes of Underrepresented Groups." *ILR Review* 67(2): 287–334.
- Buchmann, C., and T.A. DiPrete. 2006. "The Growing Female Advantage in College Completion: The Role of Family Background and Academic Achievement." *American Sociological Review* 71(4): 515–541.
- Carnevale, A.P., N. Smith, and A. Gulish. 2018. *Women Can't Win: Despite Making Educational Gains and Pursuing High-Wage Majors, Women Still Earn Less Than Men*. Georgetown University Center on Education and the Workforce. Retrieved from https://cew-7632.kxcdn.com/wp-content/uploads/Women_FR_Web.pdf.
- Combs, J.P., J.R. Slate, G.W. Moore, R.M. Bustamante, A.J. Onwuegbuzie, and S.L. Edmonson. 2010. "Gender Differences in College Preparedness: A Statewide Survey." *Urban Review* 42: 441–457.
- Conger, D., and M.C. Long. 2010. "Why Are Men Falling Behind? Gender Gaps in College Performance and Persistence." *ANNALS of the American Academy of Political and Social Science* 627(January): 184–214.
- DiPrete, T.A., and C. Buchmann. 2013. *The Rise of Women: The Growing Gender Gap in Education and What It Means for American Schools*. New York: Russell Sage Foundation.
- Ewert, S. 2012. "Fewer Diplomas for Men: The Influence of College Experiences on the Gender Gap in College Graduation." *The Journal of Higher Education* 83(6): 824–850.
- Farrell, W., and J. Gray. 2018. *The Boy Crisis: Why Our Boys Are Struggling and What We Can Do About It*. Dallas, Texas: BenBella Books.
- Forling, N.M., P. Oreopoulos, and S. Phipps. 2015. "Leaving Boys Behind: Gender Disparities in High Academic Achievement." *The Journal of Human Resources* 50(3): 549–579.
- Goldin, C., L.F. Katz, and I. Kuziemko. 2006. "The Homecoming of American College Women: The Reversal of the College Gender Gap." *Journal of Economic Perspectives* 20(4): 133–156.
- Jacobs, B.A. 2002. "Where the Boys Aren't: Non-cognitive Skills, Returns to School and the Gender Gap in Higher Education." *Economics of Education Review* 21: 589–598.
- Jensen, R. 2010. "The (Perceived) Returns to Education and the Demand for Schooling." *The Quarterly Journal of Economics* 125(2): 515–548.
- Kahn, J.S., B.L. Brett, and J.R. Holmes. 2011. "Concerns with Men's Academic Motivation in Higher Education: An Exploratory Investigation of the Role of Masculinity." *The Journal of Men's Studies* 19(1): 65–82.
- Kanny, M.A., L.J. Sax, and T.A. Riggers-Piehl. 2014. "Investigating Forty Years of STEM Research: How Explanations for the Gender Gap Have Evolved Over Time." *Journal of Women and Minorities in Science and Engineering* 20(2): 127–148.
- Klevan, S, S.L. Weinberg, and J.A. Middleton. 2016. "Why the Boys Are Missing: Using Social Capital to Explain Gender Differences in College Enrollment for Public High School Students." *Research in Higher Education* 57: 223–257.

- Mortensen, T.G. 1999. "Where Are the Boys? The Growing Gender Gap in Higher Education. *The College Review Board Review* 188(August): 8–17.
- Niemi, N.S. 2018. "Why Does the Public Distrust Higher Education? Too Many Women." *The Chronicle of Higher Education*. April 13.
- Owens, J. 2016. "Early Childhood Behavior Problems and the Gender Gap in Educational Attainment in the United States." *Sociology of Education* 89(3): 236–258.
- Pan, J. 2015. Gender "Segregation in Occupations: The Role of Tipping and Social Interactions." *Journal of Labor Economics* 33(2): 365–408.
- Patton, M.Q. 2015. *Qualitative Evaluation and Research Methods: Integrating Theory and Practice*, 4th ed. Los Angeles: SAGE Publications.
- Quadlin, N. 2018. "The Mark of a Woman's Record: Gender and Academic Performance in Hiring." *American Sociological Review* 83(2): 331–360.
- Sommers, C.H. 2013a. "The Boys at the Back". *The New York Times*, Feb. 2.
<http://opinionator.blogs.nytimes.com/2013/02/02/the-boys-at-the-back/>
- Sommers, C.H. 2013b. *The War Against Boys: How Misguided Policies Are Harming Our Young Men*. New York: Simon and Schuster.
- Strada Education Network and Gallup, Inc. 2018. Mentoring College Students to Success. 2018 Strada-Gallup Alumni Survey. Indianapolis, Indiana, and Washington, D.C.
- Tyre, P. 2009. *The Trouble with Boys: A Surprising Report Card on Our Sons, Their Problems at School, and What Parents and Educators Must Do*. New York: Three Rivers Press.
- Valian, V. 1999. *Why So Slow? The Advancement of Women*. Cambridge, Massachusetts: MIT Press.
- White, M.S. 1970. "Psychological and Social Barriers to Women in Science." *Science* 170(3956): 413–416.
- Yin, R.K. 2009. *Case Study Research: Design and Methods*, 4th ed. Los Angeles, California: Sage.