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Challenges in the Academic Pipeline: Gender Imbalances within the University of Alabama System

by

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Challenges in the Academic Pipeline: Gender Imbalances within the University of Alabama System

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Abstract - The purpose of this article is to describe the demographics of the faculty of the colleges of arts and sciences and business within the University of Alabama system and explore possible reasons for areas of underrepresentation. The findings of this research project are consistent with historical studies in which women constituted a minority of academic faculty in American universities. Furthermore, the sample set of University of Alabama female faculty members were less likely to fill tenured positions or hold leadership roles. The results obtained from this project support research management theories regarding caregiver bias as it applies to women who are face deadlines in pursuing tenure. Double standards of competency may be a major cause behind the self- and other- enforced limitations on the success in academia, as well as leadership stereotypes which prevent qualified female candidates from approaching or obtaining positions as deans, chairs, or heads of departments.

I. Introduction

Years of data collection and studies have shown that women still remain disproportionately underrepresented in leadership positions across a myriad of disciplines (World Economic Forum, 2015). Many have designed research studies around the mechanics behind this continuing discrepancy between the longitudinal career achievements of men and women. Research studies of this sort have developed theories of caregiver bias, double standards for competency, and leadership stereotypes to better understand the circumstances which may “hold women back” in their careers when compared to their male counterparts.

Academia is one such vocational field in which women are still underrepresented (Ginther & Kahn, 2006). Not only do male faculty outnumber female faculty in many academic disciplines, but they also outnumber women in leadership positions across disciplines. Additionally, women seem to “climb the tenure track” more slowly and not as far as their male counterparts typically do. But are these patterns of underrepresentation uniform across the academic institutions of the United States? Do theories about geographic and cultural influences offer more insight into these issues? Specifically, how does the University of Alabama system compare to these trends? This study was purposed to revisit some of the prominent theories about career inequality and to analyze the University of Alabama system for the same patterns of underrepresentation. The research questions pursued in this project are designed to test the University of Alabama system faculty for alignment with larger patterns or theories, and consist of the following:

1. Where in the faculty body are women underrepresented?
2. Are women as likely as men to take on leadership roles?
3. Are the rates of promotion or the proportions within roles equal among genders?
4. Are there specific disciplines in which there is an abundance or extreme lack of women?

II. Methodology

Sample. This paper presents a quantitative analysis of 1,110 faculty members of the University of Alabama System collected in 2017 and 2018 (Table 1). The data analyzed in this paper represents a small portion of overall data collected from approximately one hundred American universities; the following results are focused on the application of statistical analysis to gain insight specifically into the art, science, and business professors of the University of Alabama system. The scope of this analysis has been limited this extent to minimize the influence of regional differences and extreme gender concentration.

University	College	Art	Science	Business
The University of Alabama	College of Arts and Sciences	308	156	
	Culverhouse School of Commerce			153
The University of Alabama at Birmingham	College of Arts and Sciences	140	88	
	Collat School of Business			92
University of Alabama in Huntsville	College of Arts, Humanities and Social Sciences	67		
	College of Science		76	
	College of Business			30

Table 1. A representation of the data collected from the colleges of arts and sciences of business in the University of Alabama system.

The data analyzed in this research project was collected from official public websites for the University of Alabama, the University of Alabama in Birmingham, and the University of Alabama in Huntsville. The self-reported information was recorded in regards to each faculty member’s name, contact information, gender, job title and leadership role.

Measures. Each faculty member was categorized as an instructor if not in a tenure-track role. Other professors were categorized as assistant professors, associate professors, or full professors (referred to simply as “professors” in the results section) regardless of whether they were visiting, endowed, or otherwise distinguished in their faculty listing. Faculty were considered to be in a leadership position if they held a position as a dean, chair, or head of a department or college. The discipline of a professor was categorized as “art,” “science” or “business” based on whether their discipline was part of a Bachelor of Art, Bachelor of Science or Bachelor of Art or Science of Business Administration program.

III. Results

Women as a proportion of the workforce and at each position

Women constituted a minority of the academic body at each of the three universities, in accordance with historical faculty surveys (Bakker & Jacobs, 2016). Interestingly, women outnumber men by a slight margin at the part-time instructor level, a trend which reverses at the assistant professor level and proceeds to grow in difference at each position along the so-called “track to tenure” (Figure 1). The lack of women in roles as professors roles, particularly as associate professors and full professors, explains the overall low percentage of faculty positions occupied by women (Figure 1). The comparably low rate of promotion for women links the findings of this paper to many of the theoretical explanations behind the low numbers of women in faculty positions.

Number of UA System Faculty by Gender

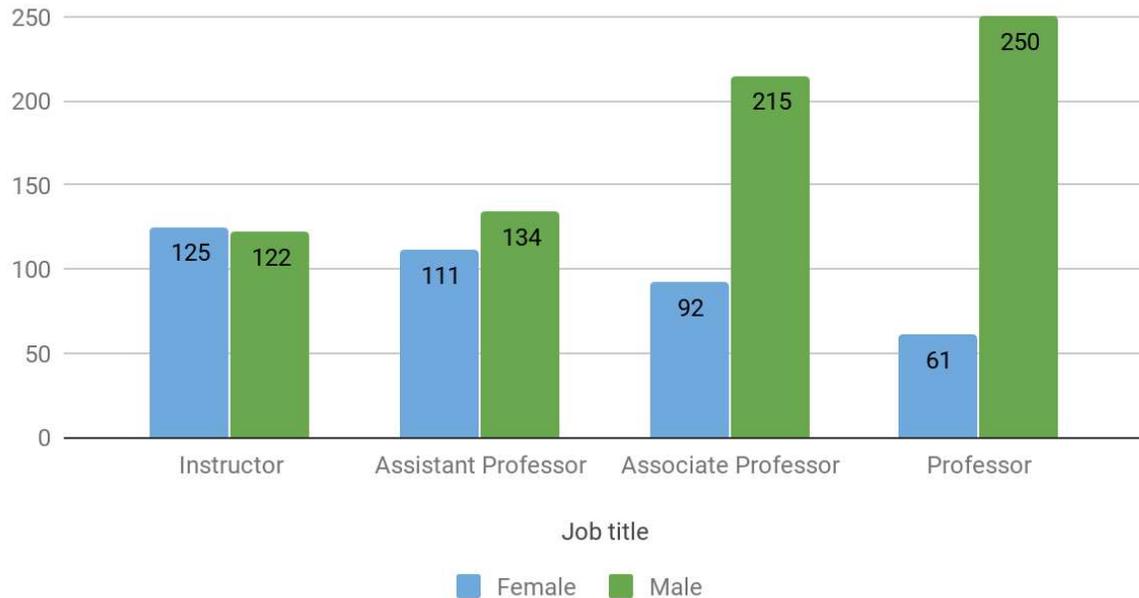


Figure 1. Number of male and female faculty occupying each role in the UA System.

The University of Alabama in Huntsville had the lowest proportion of female faculty at nearly 29% while the faculty bodies of the University of Alabama in Birmingham and in Tuscaloosa were each approximately 36% female.

Leadership roles held by faculty by gender

While the job positions held by faculty are indicative of progress toward full-time employment or, ultimately, tenured, leadership roles also signify success in an educator's career. Surprisingly, though women constitute only 19.61% of full professors, they hold 33.33% of leadership positions in the University of Alabama system colleges of arts and sciences and business.

Distribution of men and women into each position

Given the large disparity in total employment, simply examining the total number of men and women in each position does not fairly illustrate the proportion of each gender distributed into each role. Examining the male and female academic positions as percentages allows direct comparison of concentration of faculty by gender without the influence of the overall underrepresentation of women. The University of Alabama sample produced contrasting results, with decreasing shares of the female faculty population in each successive and respectively higher position, while men exhibited the opposite trend (Figure 2).

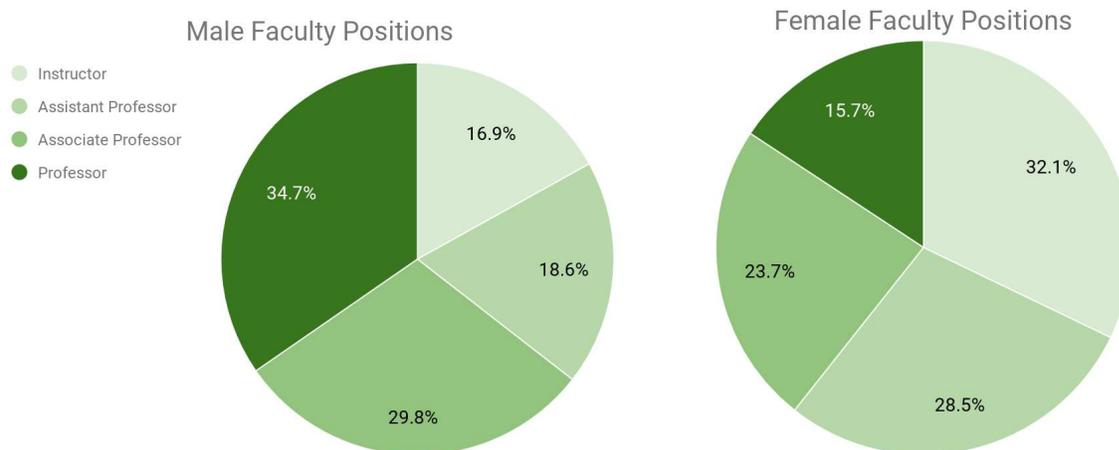


Figure 2. Percentage of male and female faculty in each role in the UA System.

Differences between colleges and disciplines

The total number of male faculty members was greater than the total number of female faculty members within every discipline of each university included in the sample. The art disciplines averaged 45% female faculty; the business disciplines, 29%, and the science disciplines, 21% (Figure 3). The highest percentage of female faculty, at 47%, was found in the University of Alabama art departments, and the lowest percentage, 14%, was found in the University of Alabama in Huntsville College of Science (Figure 3).

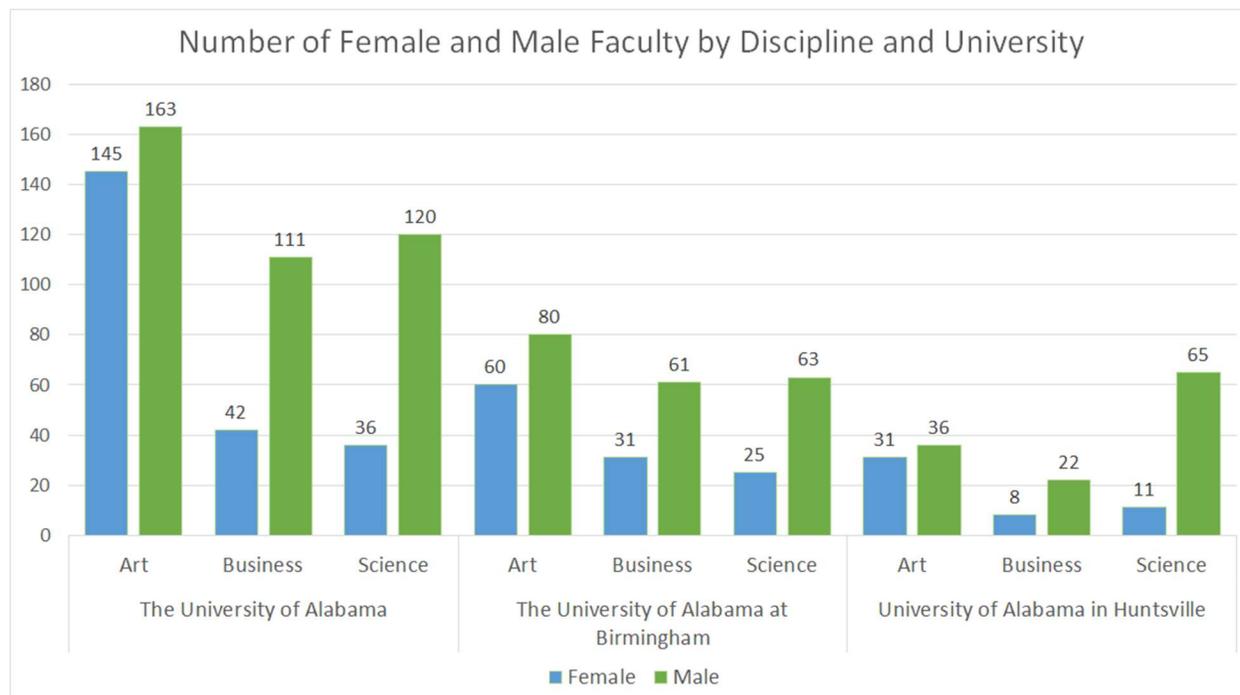


Figure 3. Number of male and female faculty teaching art, sciences, or business at each university in the University of Alabama system.

The disparity in female representation between disciplines may be attributed to the large portion of instructors and small portion of professors functioning as faculty members in art and business in relation to science

(Table 2). Because women are more present in instructor roles, and more instructors are present in business and art colleges, it follows that business and art faculty directories list more women. Similarly, the sciences contain a very small portion of instructors and a large number of full professors, who are more likely to be male; the result is that the colleges of science contain far more men than women (Figure 3).

Discipline	Instructor	Assistant Professor	Associate Professor	Professor	Total
Art	27.38%	23.50%	27.96%	21.17%	100.00%
Business	31.27%	18.18%	24.73%	25.82%	100.00%
Science	6.25%	23.13%	29.69%	40.94%	100.00%
Average	22.25%	22.07%	27.66%	28.02%	100.00%

Table 2. The percentage of all instructors, assistant professors, associate professors, and full professors constituting the faculty body of each discipline, regardless of gender.

IV. Discussion

Observations of female employment in academia are somewhat consistent with female post-secondary education as both are increasing but remain lower than rates for males and drop significantly in more advanced programs. The educational attainment of Americans over 25 as reported by the United States Census Bureau in 2017 (Table 3). Data from educational programs can be interpreted to give context to the high number of instructors and low number of professors in the University of Alabama system data set (Table 4).

	Bachelor's Degree	Master's Degree	Professional Degree	Doctoral Degree
Male	21,906	9,049	1,765	2,392
Female	24,357	11,543	1,407	1,685

Table 3. Educational levels of American men and women in thousands in 2017.

	Instructor	Assistant Professor	Associate Professor	Professor
Male	122	134	215	250
Female	125	111	92	61

Table 4. Faculty positions of men and women in the University of Alabama System in 2017 and 2018.

One key element of the relationships between the two above tables is that the educational milestones in the first table do not correspond directly to the positions below. While part-time lecturers, adjunct professors and other instructors at American universities may have only a Master's degree, a doctoral or professional degree is often the minimum educational requirement for tenure-seeking or tenured positions. The high rates of female undergraduate education and part-time instructional employment may indicate a propensity to work in non-academic fields wholly divergent from those who continue to doctoral programs and full-time academic roles (Finkelstein et al, 2016).

It provides insight to interpret these tables as a sequential “ladder to tenure” where women outpace their male counterparts in the early phases of undergraduate and Master’s degrees, possibly acquiring non-tenure-track or non-academic jobs, then diminish in number in doctoral programs; when women do pursue doctorates graduate, they find less employment in tenure-track assistant professor positions, with even fewer advancing to associate and full professor positions over time. The growing gap in promotion rates between women and men in each successive position in the University of Alabama System supports the theory that women are not completely left out of many male-dominated fields, but that they face more significant challenges or resistance in advancement (Zimmer, 1988). In academia, there are clear “tracks” of this phenomenon in the form of tenure-track positions which follow a standard sequence of assistant to associate to full professor and create obstacles for men and women alike.

The obstacles that men and women face, however, may not affect them equally, due to both the systematic disadvantages that women experience and the attitudes and assumptions of fellow faculty. The caregiver bias is a well-documented social force that makes it more difficult for female caregivers to take on equal opportunities or be seen as competent or dedicated in work environments while male caregivers benefit from the opposite effect (Bear & Glick, 2016). Despite female professors being less likely to be married and having fewer children on average than their male coworkers, they may still suffer from the biases of colleagues and superiors who determine eligibility for roles, responsibilities, and promotion to full tenure (Ginther & Kahn, 2006).

Many of the explanations for the lack of progress towards tenure and leadership for female professors originate in widely observed management and social theory applied to the academic workplace. The reliance of academic departments on councils, boards, committees and senates to mentor or judge opens the workplace to the effects of competency double-standards through which women and men both tend to rate men’s equal performance higher than women’s (Foschi, 2000). These biases have been overcome in some fields such as computer science and music through “blind” auditions and in removing names from resumes, but this tactic may not be possible in small departments where a professor’s niche research is easily recognized (Goldin & Rouse, 2000). Women also face an additional set of obstacles in pervasive leadership stereotypes that expect non-leadership “communal” behavior towards women and punishes assertive or “agentic” leadership styles that are sought in men (Koenig et al, 2011). Alongside historic underrepresentation of women in science, the stereotypes of femininity in art and masculinity in science may also explain why the percentage of female faculty in art is higher than in science.

Another popular theory is that women are catching up to men in education and vocational parity in male-dominated fields and it is only a short timescale that disguises this fact (Bakker & Jacobs, 2016). The results of this project do not support this theory because, in conjunction with similar studies in the preceding decades, it does not illustrate a figurative “swelling tide” by which women achieve more progress further along the tenure track each year of measurement, following through on promising numbers of assistant professors by increasing rates of promotion to associate and full professor approaching the promotion rates of their male peers. Rather, the findings of this paper emphasize the likeliness of women to “fall off” this track at any point in comparison to the male peers alongside whom they earned their doctoral degrees and began working as assistant professors. The caregiver bias, double standards for competency, and leadership stereotypes are all important to understanding the slow growth of women in a field where formal educational and vocational barriers have been removed.

V. Conclusion

The results of this research project support numerous historical studies of varying timeframes and sample sizes. Important trends in faculty demographics include the large number of women employed in non-tenure-track positions and the overall lack of women in tenure-track positions. More telling is the declining percentage of female representation in each subsequent tenure-track position, which aligns with other researchers’ longitudinal observations of low rates of promotion of women in comparison to men (Manchester et al, 2013). The low rates of tenure for female professors corresponds with a low rate of leadership positions.

The subjective nature of milestones critical to advancement along the academic “tenure track” creates a work environment susceptible to personal and social biases. For example, female professors may be judged more harshly on their performance as they generally are in managerial positions, and they may be held to higher standards to progress to each step. Regardless of their skill or competency ratings, female professors can also be assumed less committed to their professions due to caregiver bias, which would make any employer reticent to invest research and training funding in a highly skilled profession such as academia. Finally, that women are less likely to hold leadership positions may be attributed to the leadership stereotypes which characterize women as lacking in leadership qualities and views women who display such qualities negatively.

While women have made incredible progress in the workforce as a whole since the 1970s, male-dominated professions still remain particularly difficult for women to thrive in despite decades of development and cultural changes. The dismantling of legal and political barriers to education and employment has reshaped the American labor force as a whole, but social and managerial forces continue to influence progress along the tenure track. Many institutions have tried to counteract these forces with strategies such as tenure clock-stopping, caregiver benefits, blind evaluations, and diversity-conscientious recruiting, though only time will reveal how far these measurements go in not only enabling and encouraging women to enter the workforce, but allowing them to progress on the individual and large scale.

VI. Acknowledgements

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