

## Women 'Opting Out' of Academia: At What Cost?

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### Abstract

Previous research has examined the phenomenon of women “opting out” of the corporate environment. Much of this research has examined both “pull” factors—those of home and family life, and “push” factors—those within the organization which create a competitive environment where women feel they cannot achieve the same measure of success as their male counterparts. Similar forces, which create push in the corporate environment, are also present in academia preventing female academicians from achieving an equal presence in the higher levels of academia as their male counterparts. While the makeup of postsecondary education among students has reached a more balanced ratio in bachelors, masters and doctoral degrees, the gender make up of tenured professors and administrators in the academy still lags behind. The existence of this phenomenon presents similar loses and opportunity costs for universities as experienced by industrial organizations. This leads to the following questions; 1) How wide is the faculty and leadership gender gap in academia, 2) How have these gaps manifested in academia, and 3) What are the direct or indirect costs associated with this employment gap? The answer to these questions may lead to extensive additional research opportunities to discover strategies and guidance in the resolving these problems.

### Introduction

Gender disparities in industry employment still exist and the academic world is not immune to these trends. Academia is still predominately male and even though there has been some progress, males tend to outnumber female professors. This is concerning since women comprised 46.8 % of the total U.S. labor force in 2009<sup>1</sup> yet held only 42% of full-time faculty positions of all U.S. higher education institutions.<sup>2</sup> For universities overall, 90% of full professors in science and engineering are male, as are 75% of full professors at research universities.<sup>3</sup> An examination at the micro level of all four-year institutions shows only 21% of faculty members are women with 19.9% at private institutions and 27% at public colleges or universities. Women also tend to hold positions at lower academic ranks. According to AACSB,

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<sup>1</sup> US Bureau of Labor Statistics, "Employment and Earning, 2009 Annual Averages and the Monthly Labor Review," *U. S Department of Labor*, Washington, DC (November, 2009). <http://www.dol.gov/wb/stats/main.htm> (accessed March 8, 2011).

<sup>2</sup> US Department of Education, *Digest of Education Statistics*, 2009. [http://nces.ed.gov/programs/digest/d09/tables/dt09\\_245.asp](http://nces.ed.gov/programs/digest/d09/tables/dt09_245.asp).

<sup>3</sup> Wendy Conklin and Nicole Robbins-McNeish, "Four Barriers to Faculty Diversity," *Diversity Factor (Online)* 14, no. 4 (2006). <http://www.proquest.com/> (accessed March 11, 2011).

even though the number of women holding positions as full professors rose from 11.9% in 2001 to 16.86% in 2010, female Associate professors increased from 22.91% to 28.11%, and female Assistant professors rose from 31.69% to 36.78% in the same time period, the statistics show that the greatest disparities still exist at the higher levels.<sup>4</sup>

The gap is even most prevalent in the hard sciences. According to the National Academy of Engineering, women hold only 25% of faculty positions even though women have earned half of all B.S. degrees in science and engineering since 2000.<sup>5</sup> Women earned approximately 58% of bachelor's degrees and 51% of doctoral degrees in 2007-2008.<sup>6</sup> In 1999, the Massachusetts Institute of Technology (MIT) admitted that female professors faced "subtle unintentional discrimination". A study showing discrepancies in 'salary, space, awards and resources for women in comparison to their male counterparts'<sup>7</sup> prompted MIT's president to state, "I have always believed that contemporary gender discrimination within universities is part reality and part perception, ... but I now understand that reality is by far the greater part of the balance."<sup>8</sup>

Women also tend to work at less prestigious schools. For example, only about 27% of Princeton's faculty is female, while that of Harvard and Cornell is 31%. Columbia and Yale have the highest percentage of female faculty among Ivy League universities in the U.S. with 38% and 37% respectively (Jung, 2009). In Princeton's science and engineering departments, the percentage of female faculty is much lower, around 10% (Anonymous, 2009).

In 2009, although women made up just over 45% of the academic workforce with the U.S., they represented almost 53% of the faculty in public 2-years institutions, and nearly 62% of the faculty in private for-profit 2-year institutions.<sup>9</sup> Figure 1 shows a comparison of full-time female faculty at various types of U.S. institutions.

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<sup>4</sup> "Business School Faculty Trends 2008: A Report from AACSB International Knowledge Services." *AACSB International*, Tampa, Florida. [www.aacsb.edu](http://www.aacsb.edu).

<sup>5</sup> "Report Cites Bias against Women in Engineering Academia," *ENR: Engineering News-Record* 257, no. 12 (2006): 18. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 24, 2011).

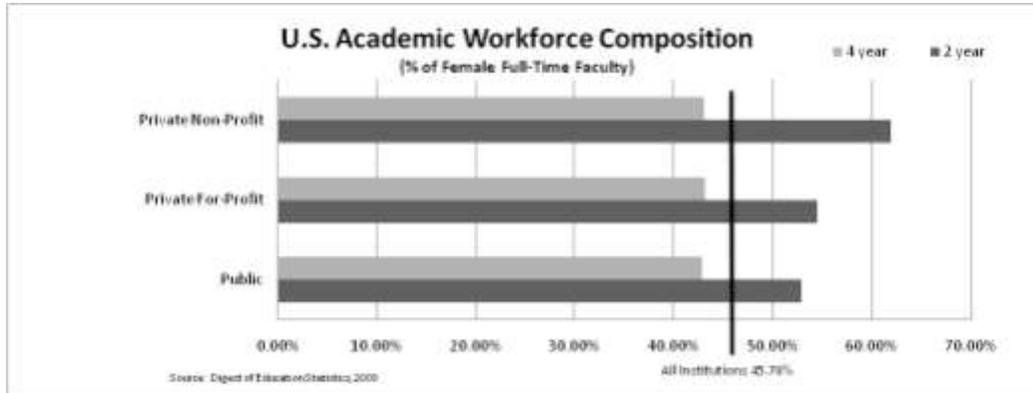
<sup>6</sup> US Department of Education, "Condition of Education 2010, Indicator 23 (NCES 21010-028), National Center for Education statistics, (2010), <http://nces.ed.gov/fastfacts/display.asp?id=72> (accessed March 9, 2011).

<sup>7</sup> Brendan I. Koerner, "The boys' club persists," *U.S. News & World Report* 126, no. 13 (1999): 56. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 24, 2011).

<sup>8</sup> Lotte Bailyn, "Putting Gender on the Table," In *Becoming MIT: Moments of Decision*, ed. David Kaiser, MIT Press Cambridge, Mass, (2010).

<sup>9</sup> Digest of Education Statistics, "Employees in degree-granting institutions, by employment status, sex, control and type of institution, and primary occupation: Fall 2007 (Table 245)," (2009). <http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?> (accessed February 16, 2011).

Figure 1



This phenomenon is not limited to the U.S. In the U.K. in 2009-2010, women comprised 38.3% of full-time academics with only 30.8% holding senior lecturer or reader positions and 16.5% holding the rank of full professor.<sup>10</sup> In the UK in the same time period, 54.5% of part-time academics were women clearly showing women played a smaller role; even when employed full-time, they held inferior positions. In the Baltic States where women constitute only 22.3% of researchers in science and technology, research found numerous examples of discrimination demonstrating a clear lack of integrity of organizational practice.<sup>11</sup> In addition, gender stereotyping in Turkey was seen as a major obstacle to women’s success at higher levels within universities, especially in administrative positions.<sup>12</sup>

Even with the number of female professorships slowly rising over the years, salaries are still not equal. According to AACSB, even though the number of women holding positions as full, associate, and assistant professors rose from 2001 to 2010, salaries have not shown much change since the 2001 figures.<sup>13</sup> Female full-professors on average made \$12,740 less than their male counterparts and over all, all ranked female professors made on average 5.32% less.<sup>14</sup> The salary gap seems to be an issue beyond just U.S. institutions. In the UK, the Higher Education Statistics Agency reported in 2009 that although women now make up approximately 19% of university professors, the wage gap between these women and their male colleagues has

<sup>10</sup> "HESA (2009/2010) Staff at Higher Education Institutions in the United Kingdom 2009/10," Cheltenham, UK: Higher Education Statistics Agency accessed from [http://www.hesa.ac.uk/index.php?option=com\\_content&task=view&id=1940&Itemid=161](http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=1940&Itemid=161).

<sup>11</sup> Nijole Vasiljeviene and Raminta Pucetaite, "Establishing Integrity to Eliminate Women Discrimination in Science: Implication from Empirical Research in Lithuania," *Economics & Management*, (2009): 633-640. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 24, 2011).

<sup>12</sup> M. Celikten, "Attitudes toward Women School Administrators in Turkey," *Education* 130, no. 4 (2010). <http://www.proquest.com/> (accessed March 5, 2011).

<sup>13</sup> Business School Faculty Trends 2008: AACSB.

<sup>14</sup> Karen Hogan, "Gender Inequity in Business Academia: Past and Present," *Forum on Public Policy* 2010, no. 2 (September 2010). <http://forumonpublicpolicy.com/papers.htm> (accessed March 10, 2011).

continued to grow and now stands at 13.9% on average.<sup>15</sup> It seems clear that gender disparities still exist in both faculty composition and in compensation.

### **Reasons for the Gender Gap**

The gender gap in academia tends to be consistent with the gender gap in industry. There are multiple "pull" factors that impact women in their academic careers. Similar pull factors discussed in our earlier paper<sup>16</sup> seem to have the same impact on women in academia leading to disjointed, broken, or non-linear career paths. The time demands of being a mother or domestic care-giver can be a difficult balancing act when weighed against the time requirements for research. Dual careers, spousal relocation, and parental care giving can also play a role in limiting the advancement of women in academia. It is inevitable that pull factors will continue to force some women to 'opt out' of their academic careers or select part-time or lower demanding positions in order to gain equilibrium in their work/life situation.

While universities can make some accommodations to address potential "pull" factors to help women gain a better work/life balance, it is important to recognize the other side of the equation. Making accommodations that address the "push" factors could have a more marked impact. Similar "push" factors which are also at play in the practitioner world - inflexible or masculine work environments, hiring/promotion discrimination, role stereotyping<sup>17</sup> - also seem to be present in academia and may explain some of the reasons for the continued gender gap. A study in the Netherlands suggests that we should not focus on the number of women on the faculty but rather the environment that influences the perceptions and ease of moving through the academic system.<sup>18</sup> Research showed that the size of the minority, whether a small or large minority percentage, didn't matter. The fact still remained that women are at a minority in academia and most are devoid of a female-friendly environment. This negative environment creates a challenge for attracting women to the field of academia and has a negative impact on career advancement once in the academy.

Research continues to show that discrimination as a result of "push" factors usually stems from one of two areas in academia: 1) social stereotypes (perceptions of females and their skills, abilities, stereotypical characteristics, or perceptions) or 2) policies and procedures that hire, manage, and promote women.<sup>19</sup>

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<sup>15</sup> M.A. Cooper, "Salary Inequity in Higher Ed: Pay Gap Persists for Women," *The Hispanic Outlook in Higher Education* 32, no. 10 (2010): 10-11. <http://www.proquest.com/> (accessed March 5, 2011).

<sup>16</sup> Thomas. O. Jones, Jr. and Beth Z. Schneider, "Beyond 'Opting Out:' Dissecting Barriers Affecting Women's Entrance and Success in Business," *Forum on Public Policy: A Journal of the Oxford Round Table* 2010, no. 2 (September 2010). <http://forumonpublicpolicy.com/papers.htm> (accessed March 10, 2011).

<sup>17</sup> Ibid.

<sup>18</sup> K.T. Sanders, T. Willemsen, and C. Millar, "Views from Above the Glass Ceiling: Does the Academic Environment Influence Women Professors' Careers and Experiences?" *Sex Roles* 60, no. 5-6 (March 1, 2009): 301-312. <http://www.proquest.com/> (accessed January 10, 2011).

<sup>19</sup> Vasiljeviene and Pucetaite, "Establishing Integrity."

**Stereotyping** Gender stereotyping continues to be a major factor in the success of women in academia, particularly in the sciences. The image of a scientist as a male working in the lab has persisted for decades, and creates a sense of an “ideal” model of the appropriate candidate for this role. When Lawrence H. Summers, the president of Harvard University, made the statement in 2005 that “issues of intrinsic aptitude” kept many women out of the sciences, he was illuminating how deeply entrenched such views can be.

The primary problem with this view is the necessity of collaboration for cutting edge scientific inquiry with a network of peers contributing to knowledge generation. The very complexities of research problems today routinely require input from multiple disciplines for solution generation. In fact, many researchers have indicated that collaborative science is essential for knowledge production and innovation, and such issues as health care and environmental care cannot be solved by individual disciplines.<sup>20</sup> Research has shown that women scientists are more engaged in interdisciplinary research collaborations,<sup>21</sup> indicating that the role of women in science represents a vital link to future scientific discoveries.

Even within mainstream academia, the focus on collegiate cooperation in research has gained wide acceptance. Yet the rewards associated with publishing often focus on the importance of sole or first authorship over being the second or third author of that research. Always putting women in the lower research position can limit their career advancement.

**Policies & Procedures** Service requirements are another area in which gender disparity exists. Much of the burden of providing service through committee membership, student contact, and general academic duties falls on lower level faculty members. With women comprising the majority of these positions, the burden to provide such service falls heavily upon them. The idea of gender diversity is appealing to many administrators when deciding on committee assignments; women who learn to “just say no” find that this burden is usually transferred to another female faculty member, creating resentment in the process.<sup>22</sup> In addition, with many service requests coming from senior faculty, refusing such requests may be viewed as disrespectful. Thus, faculty are faced with a dilemma: say no and risk the resentment of both senior faculty and lower level colleagues, or say yes and find even less time for the research needed to advance their careers.

Another area of note is that of the role of collegiality in the tenure process. Few can doubt that one must be collegial to improve one’s chances at being seen as a coworker that tenured faculty can work with for the remainder of their careers, yet a supposed lack of collegiality can be a

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<sup>20</sup> see D. Rhoten and S. Pfirman, “Women in Interdisciplinary Science: Exploring Preferences and Consequences,” *Research Policy* 36, (2007): 56-75 <http://www.proquest.com/> (accessed March 5, 2011); C. Schmickl and A. Kieser, “How Much do Specialists Have to Learn from Each Other When they Jointly Develop Radical Product Innovations?” *Research Policy* 37, no. 6-7 (2008): 1148-1163. <http://www.proquest.com/> (accessed March 9, 2011).

<sup>21</sup> F. J. Van Rijnsoever and L.K. Hessel, “Factors Associated with Disciplinary and Interdisciplinary Research,” *Research Policy* 40, no. 3 (2011): 463-472. <http://www.proquest.com/> (accessed January 10, 2011).

<sup>22</sup> K. Pyke, “Service and Gender Inequity among Faculty,” *PS, Political Science & Politics* 44, no. 1 (2011): 85-89. <http://www.proquest.com/> (accessed January 10, 2011).

smokescreen for gender discrimination.<sup>23</sup> Collegiality is code for “fitting in”, and has been defined by the U.S. Supreme Court as “the capacity to relate well and constructively to the comparatively small bank of scholars on whom the ultimate fate of the university rests.”<sup>24</sup> In departments composed primarily of men, women, especially strong women, simply do not fit the preconceptions of who belongs, and may in fact be seen as threatening to existing males. Women are seen as weak, warm, and caring, traits that are often seen as undesirable professional qualities. Strong women do not always present themselves as preconceptions may lead their colleagues to expect; failure to fit into that stereotype creates a sense of dissonance among their male peers, threatening their sense of what constitutes good academic citizenship from “uppity” female faculty members. Proving discrimination in academia can be especially difficult, however. Professors and administrators tend to be cautious about lawsuits; this caution leads to great care in determining what is recorded or written down, thereby limiting their exposure to litigation.

Eagly and Carli<sup>25</sup> propose that the reason for the gender gap is a complex issue and cannot simply be based on a single factor such as a 'glass ceiling' effect. They presented the void as a highly complex issue, or "labyrinth" posing a variety of challenges for women in working through the world of academia. It is therefore important to examine how resistance and perception to female leadership, demands of family life, and women's inability to network or build social capital impacts women at all levels of academia, not just at the highest positions. It is critical to examine both formal and informal components of each academic environment. University policies and structure in the form of work relationships, organizational culture, and invisible rules may hinder women's academic careers in various levels or forms.<sup>26</sup>

Universities have made it a stated goal to increase diversity among their populations, but diversity initiatives seem to do little to combat the pervasive culture of academia. Many universities were founded by males, and masculine values still dominate within those institutions. Although the past decades have seen an increase in the diversity of student bodies, faculty diversity has lagged behind. The cultural norms of many institutions have not readily changed; this is especially true of Ivy League universities. In 2003, 433 new professors were hired into Ivy League tenure-track positions, yet only 150 (34.6%) were women.<sup>27</sup>

Universities are some of the oldest institutions in existence and have been able to pass the test of time perhaps due to limited exposure to harsh environmental changes. Without a strong push for extensive change, organizational inertia has allowed these organizations to experience positive

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<sup>23</sup> P. Haag, "Is Collegiality Code for Hating Ethnic, Racial and Female Faculty at Tenure Time?" *The Education Digest* 71, no. 1 (2005): 57-62. <http://www.proquest.com/> (accessed January 10, 2011).

<sup>24</sup> see 1981 *Mayberry v. Dees* ruling, <http://openjurist.org/663/f2d/502>; Haag, "Collegiality Code."

<sup>25</sup> Alice Eagly and Linda L. Carli, "Women and the Labyrinth of Leadership," *Harvard Business Review* 85, no. 9 (2007): 63-71. <http://www.proquest.com/> (accessed January 10, 2011).

<sup>26</sup> S.C. Airini, et. al, "Learning to Be Leaders in Higher Education: What helps or hinders women's advancement as leaders in universities," *Educational Management Administration & Leadership* 39, no. 44 (December 2010): 44-62. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 24, 2011).

<sup>27</sup> Conklin and Robbins-McNeish, "Four Barriers."

age dependence<sup>28</sup>. While academia has faced slow ecological change, this may have contributed to the gender disparity in faculty composition. Organizational blueprints are set at the time of founding which will then structure the evolution of the organization. This foundation will impact the institutions' architectural and cultural means for attachment, its coordination and control, along with its selection process for hiring employees.<sup>29</sup> The practice of path dependence in these long established institutions may also be a reason for organizational inertia in dealing with disparities<sup>30</sup>. As a result, these universities are so imprinted by the past behaviors that they become inflexible, rigid, and locked in their hiring and promotion practices. Traditional practices of hiring and promoting males, more specifically white males, become embedded in the institutional framework and the behavior and patterns will then take extensive time or forceful interventions to initiate change. While architectural prescriptions are easy to mandate by the mere creation of new rules or policies (i.e. diversity initiatives), the change process for cultural integration can still be a slow and daunting period.

Pigeonholing is another possible reason for discrimination in hiring and promotion in academia. The traditional professor has been male, so the person who seems to best fit the criteria or "looks" right for the job would naturally be a man. Therefore, hiring and promotion committees are often times biased towards the "classic professor" stereotype. The ability to see "beyond the woman" and see the candidate based on skills or achievements is needed in order to eliminate the micro-inequalities that seep into the system.<sup>31</sup> Studies have shown that individuals who have worked with women in leadership positions will see women as legitimate leaders and hire and promote accordingly; and conversely, individuals who have only seen men in these positions, will continue in the same pattern.<sup>32</sup> So in academia, the long standing traditions and hiring/promotion routines favoring males may have a dampening effect for women seeking promotion, especially in the higher ranking competitive positions.

Gender also plays a role in the evaluation process. Accomplishments of men and women are perceived and valued differently, from their research or scientific qualifications to their teaching evaluations and social connections. This variation in perceived value can lead to lower performance evaluations for women.<sup>33</sup> These lower evaluations then impact the ability for

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<sup>28</sup> Glenn R. Carroll, "A Stochastic Model of Organizational Mortality: Review and Reanalysis," *Social Science Research* 12, (1983): 303-329.

<sup>29</sup> see James N. Baron, Michael T. Hannan, and M. Dianne Burton, "Building the Iron Cage: Determinants of Managerial Intensity in the Early Years of Organizations," *American Sociological Review* 64, no. 4 (August 1999): 527-547; Damon j. Phillips, "Organizational Genealogies and the Persistence of Gender Inequalities: The case of Silicon Valley Law Firms," *Administrative Science Quarterly* 50, (2005): 440-472.

<sup>30</sup> Jorg Sydow, Georg Schreyogg, and Jochen Koch. "Organizational Path Dependence; Opening the Black Box." *Academy of Management Review* 34, no. 4 (2009): 689-708.

<sup>31</sup> Mary C. Meaney, "Seeing beyond the woman: An interview with a pioneering academic and board member," *McKinsey Quarterly*, no. 4 (2008): 51-57. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 5, 2011).

<sup>32</sup> Phillips, "Organizational Genealogies."

<sup>33</sup> Yvonne Benschop and Margo Brouns, "Crumbling Ivory Towers: Academic Organizing and its Gender Effects," *Gender, Work & Organization* 10, no. 2 (2003): 194-212. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 24, 2011).

women to garner resources such as grants and research support, as well as limit the number of long-term contracts and promotions. So perceptions and attitudes along with inflexible policies and procedures are impacting women's success in academia.

### **Potential Costs to Academia**

Based on prior research and statistics, we posit that a gender gap exists in academia and it mirrors the gender issues from the workplace in general. It is also true that both "pull" and "push" factors contribute to this void. The troubling question then becomes: since gender disparities still exist in academia despite some advances, what are the costs? Costs associated with gender gaps have been documented in industry: loss of new perspectives, diminished talent pools, financial losses associated with employee turnover, subsequent orientation and training, image degradation among potential new hires, and loss of competitive positioning within a global economy. So with a clear loss of female human capital in academia, we then postulate that there must be some potential costs to academia in the following venues: 1) Research costs associated with contribution to knowledge and practice and 2) Instructional costs associated with teaching, learning outcomes, and student experiences.

***Contribution to Knowledge/Practice: Research costs*** Studies show that women tend to put more time into their marking load either because they have a higher teaching load or because they put more effort and time into their teaching; both occurrences imply that women have less time for research.<sup>34</sup> Findings also show that men put a higher rating on the importance of research than women. Confounding this issue is the lower number of total publications by women. At Scottish universities, since research directly contributes to incremental pay increases, men are consistently rewarded, but not women.<sup>35</sup> This therefore suggests that if research is considered an important criterion for advancement, universities should find ways for females to manage or lessen their teaching load and allow more time and opportunities to focus on research. There are also varying perceptions between men and women on how research and grants are evaluated or weighed.

Women are also considered to be more collaborative than men and work effectively in team settings. However, this can be a disadvantage as most universities focus on independent research looking to the numbers and first authorship. As stated earlier, if a female professor has several contributions based on collaborative work, these contributions will be undervalued by most evaluation systems, especially if she is not denoted as the first author.<sup>36</sup>

Adler and Harzing examined the journal ranking system and proposed that the current system tends to undermine the true purpose of scientific research and a broader approach to research is

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<sup>34</sup> Z. Todd, A. Madill, N. Shaw, and N. Brown, "Faculty Members' Perceptions of How Academic Work is Evaluated: Similarities and Differences by Gender," *Sex Roles* 59, no. 11-12 (December 1, 2008): 765-775. <http://www.proquest.com/> (accessed January 24, 2011).

<sup>35</sup> M.E. Ward, "The Gender Salary Gap in British Academia," *Applied Economics*, 48, (2001): 283-302. <http://www.proquest.com/> (accessed January 10, 2011).

<sup>36</sup> Christine Armett-Kibel, "Future Promise for Women in Science," *New England Journal of Public Policy* 22, no. 1/2(2007): 135-150. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 5, 2011).

needed.<sup>37</sup> Journals seek high rankings and desire renowned researchers for board positions. With white males being the predominate figures at most prestigious schools, the review boards of the more prestigious journals are therefore controlled by these individuals.<sup>38</sup> If women and minorities do not fit within these molds or are limited in publishing opportunities, research itself may suffer from a loss of diverse ideas, and women will face a potential loss of funding based on publications and ultimately an impact on career progression.

***Contribution to Teaching: Learning environment costs*** A key factor of success for any individual can be the availability of a mentor to help negotiate the complex patterns and expectations of a developing career. Access to someone who has reached success can provide insight into the desirability of future paths, and the steps necessary to achieve success. One important factor in a productive mentoring relationship is the protégé's perception that the mentor is someone who represents a future version of themselves, similar enough to envision themselves in the position held by the mentor. Even as the percentage of female students within universities has increased, the lack of female role models for these students continues to be an obstacle for their success. With the majority of faculty in many universities being male, and indeed in some fields the overwhelming majority, the ability of female students to find mentors and role models similar to themselves is greatly diminished. This presents a twofold issue; a lack of positive role models for females can lead to a decrease in the numbers of women pursuing advanced degrees that in turn can lead to further decreasing female faculty in the future.

The lack of female instructors is an important factor in the education of the students. It is found that having female instructors is a predictor of success for female students. When female students attend women's colleges they earn on average 2-3 times more advanced degrees.<sup>39</sup>

Research has shown the sense of closeness that students feel to their professors may well be an important component of their success, and students in coed institutions have reported feeling closer to female professors, regardless of whether the students were male or female.<sup>40</sup> Students perceived female professors as being more likely to engage in personal interaction than male professors.<sup>41</sup> Harvard Magazine has stated that the presence of female faculty is "the single most important indicator of academic success for women undergraduates."<sup>42</sup>

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<sup>37</sup> Nancy J. Adler and Anne-Wil Harzing, "When Knowledge Wins: Transcending the Sense and Nonsense of Academic Rankings," *Academy of Management Learning & Education* 8, no. 1 (March 2009): 72-95.

<sup>38</sup> Mustafa Özbilgin, "From Journal Rankings to Making Sense of the World," *Academy of Management Learning & Education* 8, no. 1 (2009): 113-121. Business Source Complete, <http://152.12.30.4:2586/bsi/search?> (accessed January 28, 2011).

<sup>39</sup> Cathy Trower and Richard Chait, "Faculty Diversity: Too little for too long," Forum, Harvard Magazine, (March-April 2002). <http://harvardmagazine.com/2002/03/faculty-diversity.html> (accessed on January 21, 2011).

<sup>40</sup> S.R. Sears and A.C. Hennessey, "Students' perceived closeness to professors: The effects of school, professor gender, and student gender," *Sex Roles* 35, no. 9-10 (1996): 651-658. <http://www.proquest.com/> (accessed March 10, 2011).

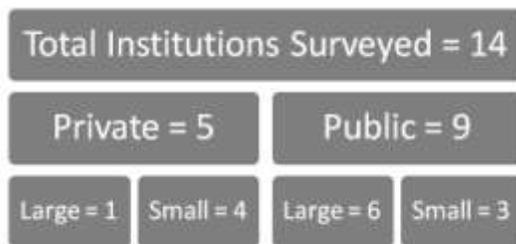
<sup>41</sup> M. Crawford and M. MacLeod, "Gender in the College Classroom: An Assessment of the "Chilly Climate" for Women," *Sex Roles* 32 (1990): 101-122.

<sup>42</sup> Trower and Chait, "Faculty Diversity."

## Research

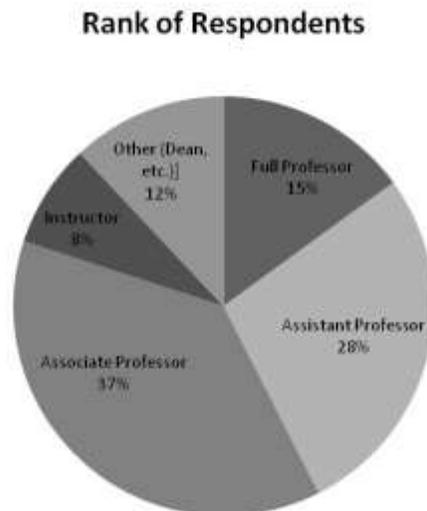
**Methods** An exploratory search was conducted via survey in order to gain insight on 1) how gender gap disparities were perceived by female members of the academic community, 2) what areas of academia these gaps were perceived as manifesting, and 3) what might be possible costs associated with these disparities. As a starting point for future research, we wanted to see if our assumptions regarding impacts and costs of the gender gap exist, and the degree of relevance in this line of research. We began our inquiry by directing the poll at the research target and therefore sampled females for our first round of questionnaires. Figure 2 shows the breakdown of the characteristics of the institutions sampled. The survey was distributed to a variety of institutions, including all academic ranks and disciplines.

Figure 2



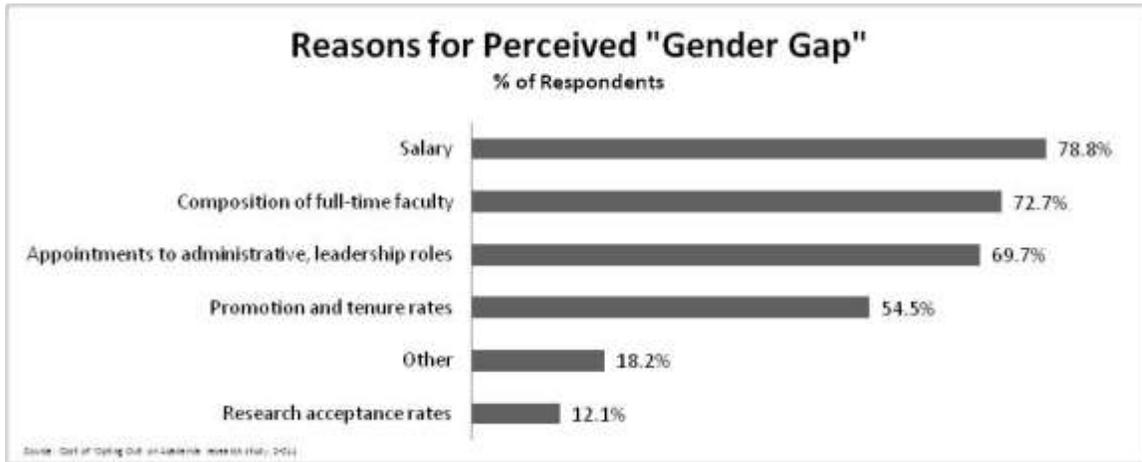
For this survey, we used the terminology “gender gap” in academia to refer to a significant disparity between males and females in teaching and research academic institutions including 1) composition of full time faculty, 2) salary, 3) promotion and tenure rates, 4) research acceptance rates, 5) appointments to administrative, leadership roles, and/or 6) other meaningful areas. The inquiry included the women's position, years of experience in academia, and along with their perception of the existence of a gap and if they perceived it exists, what might be potential costs.

**Results:** As a result of our survey 80% of respondents held professorship positions with a breakdown in rank as follows:



We surveyed 240 women in academia with a 17.1% response rate. 53.7% of the respondents had over 10 years of experience in academia and 22% had between 5 and 10 years of experience with the range covering 1 year of experience up to 36 years. In response to whether they perceived that a gender gap existed in academia, an overwhelming 88.9% stated "yes." Of the full-time full, assistant, and associate professors, 89.7% perceived a gender gap exists in academia. 100% of the women with over 10 years of experience in full-time ranks answered affirmatively which shows that the span of time has not erased the gender gap.

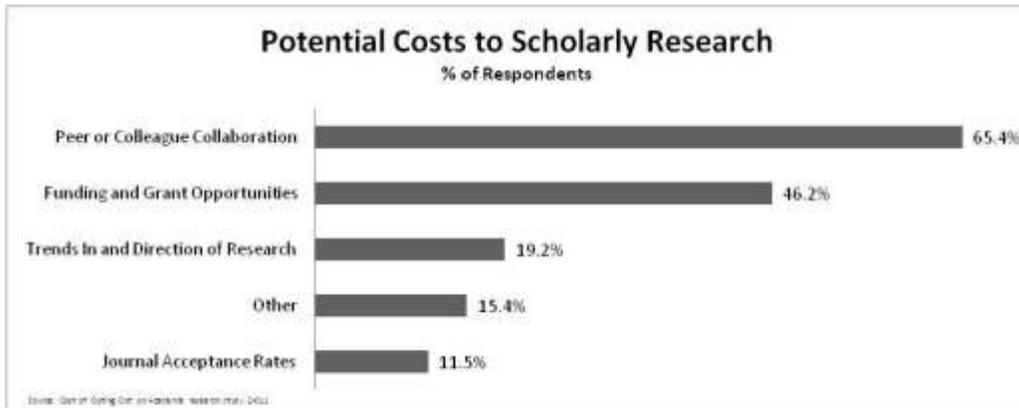
In the areas in which the perceived gap manifested the following responses were recorded:



Since existing statistics clearly demonstrate the gap in faculty composition and salary, the high level of responses in these areas were not surprising. In examining if the perceived gap has an impact on academia, for those who perceive that a gap exists, all (100%) of the full professors as well as all of the full-time ranked professors with over 10 years of experience, believe the gap limits women in appointments to administrative or leadership roles. So even women who have garnered academic positions or who have remained in academia for at least 10 years feel that the academic world presents barriers for women with regards to vertical mobility.

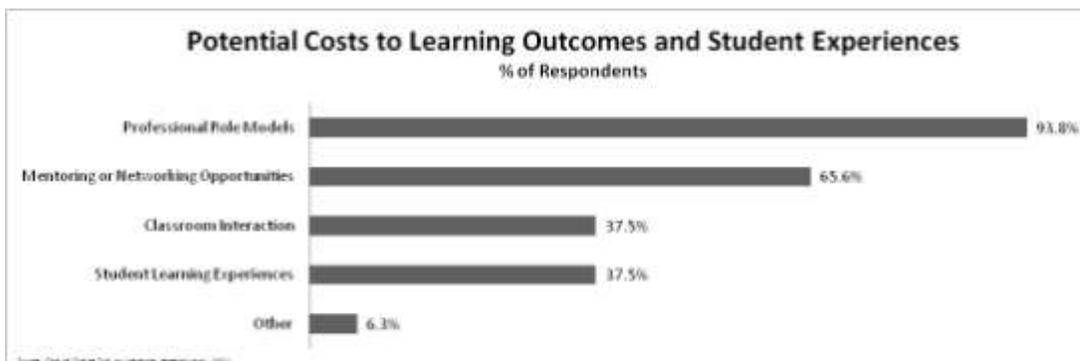
Qualitative responses demonstrated that several respondents felt women were asked to perform many more service or social roles than their male counterparts including committee work, student advising or counseling, and internal "housekeeping" or lower level tasks than their male counterparts. Some respondents mentioned that this "ate into their time for doing research or playing more visible roles to external stakeholders." By spending so much time on service duties, they felt that their "time was not as valued" and impacted their evaluations and chances for tenure and promotion.

In response to potential costs to scholarly research the overall findings showed:



Of the respondents who perceive a gap to exist, 85.3% felt that there was at least some type of cost associated with scholarly research. The areas where perceived costs were highest were in funding and grant opportunities and in peer and colleague collaboration. With almost 54% of respondents having over 10 years of experience, we surmised that collaboration with colleagues should have leveled out, as the women were able to generate networks over their tenure. However, this does not seem to be the case and would be interesting to see how or why collegial networks are hampered for women. Most of the respondents who provided free response felt that scholarly research suffered due to lack of time because of the high level of service work assigned to them. They also mentioned that they "did not receive the information for opportunities" or the "perks" that were offered to their male counterparts when it came to completing research.

In evaluating the potential costs to learning outcomes and student experiences the following results were observed:



The results showed an overwhelming feeling that the gender gap negatively impacted the visibility of female role models. Of the respondents who perceive a gender gap to exist, an overwhelming 97.1% felt learning outcomes and student experiences were negatively impacted in some way. We learn by experience and what we see, so if there are fewer female professors

and even fewer females at the higher ranks, and since traditionally the higher ranking professors teach in the masters or doctoral programs, it seems logical that any female students participating in these programs would be devoid of female role models. One clarification is that we did not specify if these role models were for female or male students. While we contend that both genders need to have positive female role models, it would be good additional research to delve deeper into this issue as it was so highly ranked. Falling in line is then the next implication that mentoring and networking opportunities suffer. This correlates with lack of role models as well. We tend to select mentors from those we can relate or respect, and if female students are not exposed to female professors, they will lack the relationships needed to build mentoring connections. Again this was not clarified in the survey and would be another research question to consider in how this impacts male and female students specifically.

In respondents' specific concerns, they felt that lack of role models and mentors would impact the number of females seeking higher degrees. As mentioned earlier, research has shown that female students with more contact with female professors are more likely to attend graduate school.<sup>43</sup> Some indicated a fear that without improving the status of women in academia, women in the field will not be taken as seriously for their contributions, and this could reflect in the possibility that recommendation letters from female faculty members are not taken seriously by outsiders, therefore, hurting the students in their endeavors.

**Limitations:** This survey was conducted as an exploratory measure to help determine areas for further study. The survey sample size was relatively small as this was a preliminary study. Even though it is clear that a gender gap was perceived by a majority of participants in this survey, it must be noted that a gender gap may not be present at all colleges and universities in the U.S. or abroad.

Although results support the contention that a clear gender gap exists throughout areas of academia, it is still not definitive whether this gap exists from design or from other factors arising from negative attitudes and values that can be difficult to control. Design issues themselves can be difficult to address, arising as they do from the cultural paradigms of academia in general, and institutions in particular. Deep-seated norms that drive the development of current systems of recognition and advancement are at the heart of these systems; any attempts to address design changes must also address the underlying norms that place a priority on male models of thought.

We recognize that this preliminary survey was limited in scope and covered a relatively small number of organizations. A more in-depth survey is needed to include a scale-based approach to determine the depth and level of the gap. Follow-up interviews would also be helpful to determine the personal bias or implications of the responses. Another major limitation of the current study is that it is based solely from a female perspective. Although women have consistently shown that many males fail to recognize or legitimize the disparate treatment of

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<sup>43</sup> Ibid.

females in academia, this research needs to be extended to a larger population including both male and female respondents.

The determination of whether the potential gender gaps have definitive negative impacts on the state of affairs in academia is based on speculation and not on empirical data. As this was a cross sectional study, a longitudinal study could provide better insight into how these trends have changed over time and how the gender gap has impacted students throughout their careers.

### **Recommendations**

This research has produced evidence that academia should seek opportunities to address the apparent gender inequities in faculty recruitment and promotion, and to examine the existing cultural factors that conspire to prevent women from achieving the same measure of success as their male counterparts. Much of what has been learned about gender issues has been used to create enhanced opportunities for women in industry, yet the very institutions that have created this knowledge have been slow to adopt these findings to their own practices.

One of the first recommendations is that academia take a closer look at current standards for recruitment and promotion. When major universities have acknowledged that the composition of their full-time faculty are heavily male, and yet half or more of their student bodies are female, then the question of being able to fully engage and motivate female students becomes paramount. The need to broaden skill sets beyond academic scholarly manuscript generation, to create a well-rounded faculty base that can not only actively engage a broad spectrum of students, but also effectively engage in the types of collaborative research necessary for solving the complex problems of the modern world, cannot be overstated.

This does not imply that academic publications are not to be valued; one must recognize that many accreditation bodies view publishing as a key indicator of professional qualifications. Instead, the implication is that academic institutions must recognize their fundamental purpose of disseminating knowledge goes beyond such a one-dimensional approach to thinking about the qualifications desired for new hires, and the measures of success used to promote faculty to higher ranks. Faculty members are part of a collective body; as such, the ability to successfully interact with colleagues is vital for the continued success of the institution as a whole.

Promotion and tenure rates should also be examined with an eye toward the expectations of the institution toward the qualifications of junior faculty. The “publish or perish” mentality prevalent in many institutions is a reflection of the mindset that has created the inequities discussed here. The abundance of service expectations for lower level faculty, the lack of positive role models for females, limited access to mentoring and networking opportunities, inadequate access to funding and grant opportunities, and little focus on classroom performance and student interaction are all barriers to women’s success that continue to create gender inequities in academia.

While institutions make much of collegiality, the concept of “fitting in” must be examined to determine whether it is truly used to create healthy, cooperative atmosphere, or to instead

exclude those who do not fit into the preconceived notions of what a faculty member should look or act like. Seeking personal interaction skills, acknowledging the importance of gender differences in teaching and leadership styles, and recognizing the importance of collaborative work are all relevant dimensions of building a collegial faculty. Institutions are thus faced with the task of examining the environment in which the concept of collegiality is imbedded; to determine the exclusive or inclusive nature of that environment, and to address those ingrained cultural values that can act to deter the recognition of varied forms of contribution.

Compensation is another area in which institutions must examine themselves for evidence of gender inequity. Again and again, pay disparities appear in institutions around the world; yet the rationales for these differences are not well considered, and therefore not articulated in a meaningful way. Institutions must examine the drivers of these inequities to fully understand the processes that create gender based wage gaps within their systems, with an eye toward eliminating covert biases that lead to discriminations in compensation outcomes.

Another area of self-examination is the promotion of women to administrative and leadership roles, and the attitudes of current faculty toward females in these positions. The demonstrated abilities of women to create supportive networks, engage in collaborative efforts, and organize effective resources while encouraging feelings of success in others are all keys for effective leadership. Yet these very qualities are often seen as “soft” qualities, and thus unfit for the duties of leading others. Closer reflection on the values inherent within the institution will provide much insight into the factors that serve to prevent the meaningful involvement of more women into leadership positions.

Finally, empirical research would be instrumental in measuring the direct and indirect costs associated with gender gaps in academia. The utilization of large, diverse subject groups in this research would greatly impact the generalization and replication of these findings. Longitudinal studies tracking the career progression of females after graduation would more succinctly determine points of “leakage” from the academic pipeline, and the reasons why such leakage occurs. In-depth measurement is needed of the values and assumptions of faculty and administrators to identify problematic areas of preconceptions that can create barriers to female faculty success. All of these areas merit further exploration; hard data is needed to more adequately examine the factors that contribute to observed gender inequities in academia, and to understand and correct the forces acting to create these inequities.

## **Conclusion**

It is clear that a gender gap exists in the academic world caused by both "pull" and "push" forces. While academic organizations can institute policy changes to help women work around some of the pull factors, it is critical that more is done to address the causes and impact of those factors that act to push women from professional success. Changing thought processes that have led to the creation of current restrictive policies can be a monumental task, but must be addressed before any substantive changes in systems design can be made to address gender inequities. Such changes must occur, however. Student success in the classroom and future success in the

sciences through collaborative efforts will largely hinge on the re-examination of the role of women in academia, and the subsequent re-evaluation of policies and processes that act to hinder the equal participation and recognition of those professionals.

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## Appendix A

A questionnaire was designed to use in interviews with a sampling of academic instructors at all ranks, in multiple disciplines at several universities for this research. A copy of the questionnaire follows:

### Research Questions

The participants for the study were selected as samples for this research from the following institutions and representative of the following positions:

- Professor
- Assistant Professor
- Associate Professor
- Full Time Instructor/Lecturer
- Part-time Instructor or Adjunct
- Administrative Appointment (Dean, Asst. Dean, Dept Head, etc.)
- Other (Please Specify) \_\_\_\_\_

The survey questions addressed the following issues:

1. Do you perceive that a “gender gap” exists in academia? Yes \_\_\_\_\_ or No \_\_\_\_\_  
If yes, in which of these areas have you perceived a "gender gap"? Please check all that apply:
  - a. \_\_\_\_\_ The composition of full-time faculty
  - b. \_\_\_\_\_ Salary
  - c. \_\_\_\_\_ Promotion and tenure rates
  - d. \_\_\_\_\_ Research acceptance rates
  - e. \_\_\_\_\_ Appointments to administrative, leadership roles
  - f. \_\_\_\_\_ Other, please specify \_\_\_\_\_
  
2. If you perceive that there is a “gender gap” in academia, in what area(s) do you feel scholarly research is negatively impacted? Please check all that apply:
  - a. \_\_\_\_\_ Funding and Grant Opportunities
  - b. \_\_\_\_\_ Journal Acceptance Rates
  - c. \_\_\_\_\_ Trends In and Direction of Research
  - d. \_\_\_\_\_ Peer or colleague collaboration
  - e. \_\_\_\_\_ Other, please specify \_\_\_\_\_
  
3. If you perceive that there is a “gender gap” in academia, in what area(s) do you feel learning outcomes and experiences of students are negatively impacted? Please check all that apply:
  - a. \_\_\_\_\_ Student Learning Experience
  - b. \_\_\_\_\_ Classroom Interaction
  - c. \_\_\_\_\_ Professional Role Models
  - d. \_\_\_\_\_ Mentoring or Networking Opportunities
  - e. \_\_\_\_\_ Other, please specify \_\_\_\_\_