

Women's Advancement in Politics: Evidence from Congressional Staff*

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Abstract

We examine gender differences in policy influence and advancement within the congressional office context using US Congress payroll system data between 2001 and 2014. We document how congressional careers share structural features with non-political occupations with gender gaps. We find that women staffers experience slower promotion and less compensation than men at the same rank and that the gender gap is most salient for positions presenting the greatest structural challenges for women. However, these differences are shaped by the salience of gender equality issues within the office, varying by legislators' party and gender and by the roles of other women within the office. Our analysis offers leverage for assessing previous explanations for women's underrepresentation among policymakers, suggesting that electoral factors, supply lag, and institutional inertia do not solely account for gender differences. However, the political context mitigates gender disparity because of the salience of gender equality within the political workplace.

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“Being a woman on Capitol Hill in a senior role is an accomplishment. I’m a rarity, and I know I’ve had to work double overtime to get here. It’s made me stronger, I have thicker skin, and I’m much more confident because I know I’ve blazed trails.” (Congressional staffer, 2015)¹

While female lawmakers are underrepresented in the US Congress, occupying about 20% of the seats in the House and Senate, the gender balance among congressional staff is far more equitable. Women comprise over half of House members’ and senators’ personal office staffs. Yet, evaluations of representation in Congress have focused on the gender of elected officials while neglecting the diversity of the congressional enterprise.

However, growing evidence of the importance of congressional staff suggests that unelected women in Congress may have substantial influence over public policy, despite the underrepresentation of elected women. In fact, legislative staffers have considerable influence over policymaking (e.g., Fox 1997; Malbin 1980; Montgomery and Nyhan 2017). Moreover, the representation congressional offices provide is dependent on staffers’ personal opinions (Hertel-Fernandez, Mildemberger and Stokes 2019), suggesting that women’s presence within the congressional enterprise is an important component of descriptive and substantive representation.

Yet, the predominance of women on congressional staffs may not equate to policy influence. Recent findings on the importance of staff focus on senior staffers or staffers who have policymaking roles (e.g., Crosson et al. 2018), rather than examining variation across the entire hierarchy of staff positions. Where women tend to fall along the staff hierarchy has important implications for their influence over policymaking and their access to the legislator. The factors shaping, and challenging, women staffers’ advancement remain unknown. Moreover, examining gender differences in the context of congressional office staff and the experiences of unelected women policymakers contributes to our understanding of the elected women in politics as well.²

We argue that the congressional office offers a unique context for examining gender differences

¹Quote from 2015 survey of female congressional staff, *National Journal* (<https://www.nationaljournal.com/s/52288/whats-like-be-woman-capitol-hill>) (accessed June 17, 2019).

²We use the general term “policymakers” to refer to both legislators (elected policymakers) and congressional staff (unelected policymakers).

in access to policy influence by allowing us to rule-out a wide-range of election-specific explanations. We build on existing research (e.g., [Lawless and Fox 2010](#)) by questioning explanations focused solely on electoral rules, pipeline or supply lag, and institutional inertia (e.g., incumbency advantage) as leading causes of women's underrepresentation. We argue that gender differences among policymakers (whether elected politicians or unelected staff) are not particular to electoral or even political contexts (i.e., careers in politics), and that while electoral and political explanations identified in the literature may contribute to gender differences, they are not necessary features of careers with observable gender disparities. However, while the gender gap is not particular to careers in politics, we argue that the political context is unique for its role in mitigating the gender gap because issues of gender equality are particularly salient in the political workplace.

Specifically, we argue that congressional careers, whether elected or unelected, are similar to other occupations where we see a gender gap in pay and promotion. A common feature of the organizational structure of such careers is the demanding, unpredictable yet inflexible schedule, which presents greater challenges for women, who still bear the majority of household and child care responsibilities ([Goldin, 2014](#)). Congressional staffers are often expected to work through late votes and weekend events. Moreover, congressional offices are not required to offer paid parental leave, and securing child care in DC that is affordable on the modest salaries of Hill staffers has led to growing concern that the inadequate family leave policies and on-site daycare facilities are leading to a hemorrhage of talented staffers, particularly women ([Tully-McManus 2018](#)). It is important to note that these structural features of the organization of Congress (e.g., voting schedules) do not work alone to induce gender inequality; we would not observe gender differences if the organizational structure of Congress affects (i.e., hinders) men and women equally. Instead, the organizational structure of Congress (as well as other non-political careers with similarly demanding, inflexible schedules) interacts with traditional gender socialization that places greater child care and household demands on women (see, for example, [Lawless and Fox 2005, 2010](#)).

However, while child care issues and demanding schedules are not exclusive to political careers, the political context is unique because of the salience of gender equality within the day-to-day busi-

ness of political workplaces. For many congressional offices, gender equality is a critical feature of their reelection platform. Legislators and their staff work on issues important to the advancement of women on a daily basis, through legislation, speeches, and discussions with constituents and advocacy groups. We argue that the importance and salience of gender equality within these offices leads to greater attention to the promotion and roles of women within the office, challenges to women staffers' advancement, and equal pay, thus leading to office policies and cultures that mitigate the gender gap among staff.

However, the salience of gender equality varies across offices, with Democratic offices facing more pressure on women's representation and advancement than Republican offices (Crowder-Meyer and Cooperman 2018; Fox and Lawless 2010). Additionally, offices of women legislators are likely to be more aware of issues of gender equality because of the shared history and experiences of the legislator. This variation in the salience of gender equality across offices leads to differences in the size of the gender gap, in both pay and promotion, by party and gender of the legislator.

We test these arguments using detailed data that include all congressional staffers who are enrolled in the payroll system in the US Congress between 2001 and 2014. In our examination of personal office staff,³ we find that men and women staffers have different experiences, political opportunities, and access to power in Congress. First, we find that women experience lower rates of advancement to powerful positions than their male colleagues. In fact, despite making up the majority of staff positions, women staffers tend to be concentrated in lower ranking, clerical positions rather than in policymaking and senior roles. Although women comprise over 60% of the lowest rank among staffers, the ratio of female staffers at the top rank is much smaller.

Second, we find that female staffers tend to receive less compensation than male staffers in similar positions. The gender pay gap among congressional staffers is much more salient in the Senate and for positions that are the most demanding in terms of the long, unpredictable hours that are required. Most staff in these positions are in their late twenties and early to mid-thirties,

³We examine only personal office staff and exclude committee, party, and congressional support agency staff in our analyses for an appropriate comparison.

the age range when college-educated women are becoming first-time mothers and taking on additional, and a disproportionate, share of household and child care responsibilities (Bui and Miller, 2018).⁴ The disproportionate increase of child care and household labor women experience at the age when they are facing increasing demands in order to be successful and advance in their careers exacerbates gender differences up the staff hierarchy. We also show how key features of the congressional office context allow us to rule out a wide-range of previously proposed explanations for the underrepresentation of women policymakers.

Third, these gender differences are shaped by the gender and party of the member of Congress. Female staffers who work for Democratic legislators or female members of Congress experience faster promotion than other female staffers, but even this effect does not fully overcome the gender promotion gap among congressional staffers. Finally, we find evidence the negative spillover effects within ranks: when there are more female peers at the same rank, it reduces women's advancement within a hierarchy of a congressional office.

These findings present a nuanced perspective on women's political influence and roles in representation. While women comprise a majority of congressional staff, their influence is limited by the roles they fill. Women are concentrated in lower-ranked, administrative positions, and less for positions responsible for policymaking and legislative decisions. In short, the presence of women on Capitol Hill does not equate to influence in Congress.

Furthermore, these gendered roles and opportunities are shaped by legislators' partisan and gender differences. This finding suggests there may be a disparity in women's roles and influence across the political parties, but also that women's impact in Congress may change with increased gender balance among legislators. Taken together, the mere presence of women in Congress falls short of equitable policy influence. Women's access to power is limited by the roles they fill and their ability to advance.

⁴For average ages of staff in various positions, see the 2001 Senate Staff Employment Study (http://www.congressfoundation.org/storage/documents/CMF_Pubs/cmfsenatesalarystudy2001.pdf) and the 2010 House Compensation Study (http://assets.sunlightfoundation.com.s3.amazonaws.com/policy/staff%20salary/2010_house_compensation_study.pdf)

The Importance of Unelected Women Policymakers

What limits women's policymaking influence? The literature on women and politics provides several reasons to be concerned about the underrepresentation of women policymakers. Female elected officials influence the agenda (Swers 1998; Wolbrecht and Campbell 2007), articulate underrepresented and marginalized perspectives (Osborn and Mendez 2010; Pearson and Dancey 2011), tend to have more collaborative policymaking styles (Carey, Niemi and Powell 1998; Rinehart 1991; Thomas 1994), and impact legislative processes and outcomes (Schulze and Hurvitz 2016; Swers 2002; McDonald and O'Brien 2011; Volden, Wiseman and Wittmer 2013). While scholars continue to debate whether there are gender differences for lawmaking (see, for example, Lawless, Theriault and Guthrie 2018), there is a general consensus that women's presence in politics is important for representation, whether symbolic or substantive.

Yet, women's access to power is limited by gendered political opportunities and bias in elections (Fox and Lawless 2010; Lawless 2011; Lawless and Pearson 2008; Holman, Merolla and Zechmeister 2016), party organizations (O'Brien 2015; Sanbonmatsu 2006), and government institutions (Lawless and Fox 2005). Previous explanations for the underrepresentation of women in elected positions have pointed to voter biases about women candidates (e.g., Lawless 2004b) and gender differences in gatekeeper and challenger assessments (Palmer and Simon 2006; Lawless and Pearson 2008) and in media coverage (Fox 1997; Kahn 1996, but see Hays and Lawless 2006). The gender disparity in Congress may be exacerbated by incumbency advantage (Darcy, Welch and Clark 1994) and a lag in the growth of women in "pipeline" careers that provide stepping stones for elected office that have traditionally been dominated by men (Darcy, Welch and Clark 1994; Duerst-Lahti 1998). Still, other scholars have argued that gender socialization affects potential women candidates' willingness to run for office and that the underrepresentation of women is due, in part, to lower levels of political ambition among women and that women underestimate their qualifications in comparison to men (Lawless 2004a; Lawless and Fox 2010; Lawless 2011).

Despite the large body of literature on women in politics, previous research has focused on

women candidates and elected officials, neglecting the role of *unelected* women in politics.⁵ In fact, we know comparatively little about the experiences, roles, and consequences of unelected women policymakers and representatives. This is surprising given the public and academic attention to the growing number of female candidates and elected officials, but also because of the influential, although often invisible, role of unelected representatives and policymakers.

However, women's mere presence on congressional staff does not necessarily mean they are in positions of influence. Congressional staffers can be important policymakers, providing information, engaging in networks both on and off Capitol Hill, and bringing issues to their boss' agenda, but recent evidence (e.g., Hertel-Fernandez, Mildenerger and Stokes 2019; Montgomery and Nyhan 2017) has been limited to senior staff. However, if women are predominately confined to low-ranking, administrative positions, answering the phones and scheduling rather than working on policy, their influence is significantly reduced.

In fact, the unelected women of Capitol Hill provide a useful approach for considering the underrepresentation of women in politics. Notably, many of the explanations for the underrepresentation of elected women, like incumbency advantage, unfair media coverage, fundraising uncertainty, and voter perceptions, do not extend to unelected women in politics, who do not face the same challenges particular to elections. Examining the experiences of unelected women may contribute insight beyond election-specific explanations.

For example, institutional and pipeline explanations for the underrepresentation of women politicians point to incumbency advantage, the availability of open seats, and a lag of women in pipeline professions (Carroll 1994; Darcy, Welch and Clark 1994). However, congressional staffs do not suffer from the same lag in opportunity for advancement or the supply of qualified women. Unlike women candidates and legislators, women make up the majority of staff, occupying more of the entry-level positions across both parties and the gender of the member.⁶

This point is particularly important when we consider gender differences in promotion, since previous Hill experience is considered the most valuable qualification for senior staff positions and

⁵For exceptions, see Barnes and O'Brien 2018; Rosenthal and Bell 2003; Dolan 2002; Krook and O'Brien 2012.

⁶Women congressional candidates hover around 20%, even in 2018's "year of the woman" (Kurtzleben 2018).

staff are generally hired from within the Capitol Hill community and even within an office (Gale 2014). Thus, gender does not appear to be a barrier to entry for congressional staffers, suggesting that a shortage of women in the pipeline is not a problem.

Likewise, previous work offers incumbency advantage and the availability of open seats as factors slowing the rate of women getting elected to Congress. However, congressional offices have a notoriously high rate of staff turnover, with reports of an average House office retention rate in a two-year period around 64%, suggesting that opportunities for promotion to influential positions are not an issue for women staffers.⁷ Together, this suggests that the supply or pipeline of qualified women and the opportunities for turnover and promotion are not a problem for women staffers.

We build on previous work that has questioned explanations focused on structural barriers, electoral rules, and institutional inertia as the leading cause of women's underrepresentation (see Lawless and Fox 2010). We argue that electoral-specific explanations for the underrepresentation of women in policymaking positions are inadequate, as evidenced by the lack of women in *unelected* policymaking positions. However, we argue that the political context is unique for the role it plays in mitigating the gender gap among both elected and unelected women policymakers. This theory is supported by our results that show predictable variation across conditions. We are limited in our ability to clearly identify a causal mechanism, despite our research design and efforts at controlling for confounding factors and alternative explanations. Additionally, we recognize that the institutions and norms particular to elections (e.g., single-member district systems, primary process) exacerbate the gender gap for politicians. However, the congressional office context offers leverage to rule out a wide-range of election-specific explanations as necessary for the underrepresentation of women policymakers. At the same time, our results inform our understanding of gender differences among elected officials by focusing on the common hurdles faced by women, whether elected or unelected.

⁷The Sunlight Foundation, which published this finding for the period of 2009 through 2011, points out that, "At this pace, we would expect the average House office to turn over fully within three sessions of Congress (Drutman 2012).

Given that staffers are not merely loyal agents of the legislator (Montgomery and Nyhan 2017) and that the personal views and networks of individual staffers can have implications for representation (Hertel-Fernandez, Mildemberger and Stokes 2019), it is important that we understand women's experiences and roles on congressional staff. While women comprise a majority of personnel positions within Congress, their actual role in policymaking and influence is less clear. In fact, the proportion of women in congressional offices could be a misleading indicator of their influence if they are relegated to clerical and low-status positions. Finally, examining gender inequality in congressional offices may offer insight into the underrepresentation of women in politics in a broader context.

Explaining the Gender Gap on Capitol Hill

What might shape the roles and experiences of women on Capitol Hill? Do women staffers have access to positions of policymaking influence? Existing research focusing on women politicians may lend some insight into the representation of women on congressional staffs and the gender distribution across the staff hierarchy. However, the incentives and context of unelected women in politics differ from politicians. Thus, many previous explanations for the experiences of women policymakers, such as the electoral process and voter biases, unfair media coverage, and fundraising challenges, do not extend to female staff.

However, other research on women politicians focuses on factors that are present for both elected and unelected policymakers. For example, Lawless and Fox (2010) examine gender differences in political ambition as a factor keeping women out of politics. This is, in part, because women are less likely than men to perceive themselves as viable candidates or qualified to hold elected office and more likely to believe the political environment is very competitive, particularly for women (Lawless and Fox 2010). Gender differences in the weighing of child care and career priorities is also a component of the gender gap in political ambition; women are less likely to consider pursuing elected office out of concern for family obligations and because they still bear the majority of child care and household responsibilities (Lawless and Fox 2010).

The gender gap in ambition may also explain barriers to women's advancement beyond elected office, including among congressional staff. If women staffers are more likely than their male co-workers to believe they are not qualified to take on policymaking roles, they may not pursue promotions. On the other hand, clearly women staffers, even in entry-level positions, had enough ambition to get their foot in the door. However, perhaps as women staffers approach their mid to late-twenties and observe the demanding work schedules of their senior colleagues, they decide such promotions would not allow them flexibility for family obligations and child care responsibilities and either stay in lower-ranking positions or withdraw from a career in politics altogether.

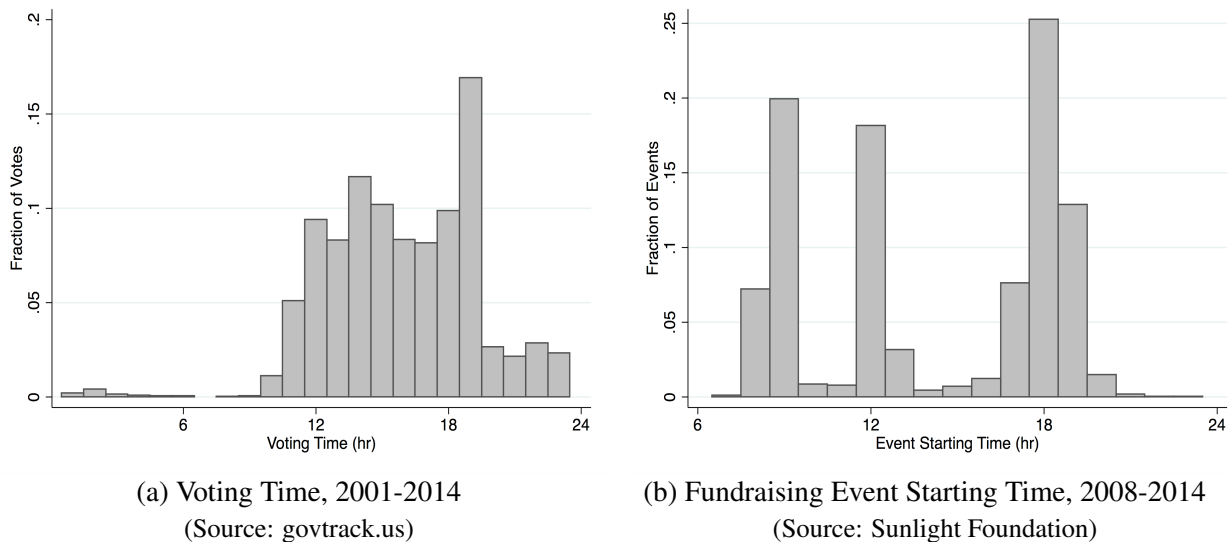
In fact, demanding, inflexible work schedules, a significant challenge for child care, are a shared feature of careers in politics, whether elected or unelected, as well as other non-political occupations characterized by gender gaps in promotion and compensation. The gender pay gap is larger in occupations that reward individuals who worked long hours and inflexible schedules and tend to be described as jobs where "time pressure, contacts with others, and establishing and maintaining interpersonal relationships" matter (Goldin 2014). Thus, the gender gap in promotion and pay may be primarily driven by how jobs are structured and temporal inflexibility because of child care challenges for women.

These characteristics of occupations with a higher gender gap depict staff positions in Congress precisely. In particular, the (often unpredictable) demands made on congressional staffers after regular working hours impose significant time constraints on those with child care responsibilities. Of course, all full-time congressional staffers are expected to keep regular business hours. However, the workload is particularly intense while Congress is in session; when staffers are expected to be available to their bosses as long as votes are taking place and often to accompany their legislators to events throughout the evening between and after late votes and even on weekends. For example, in March 2018, Senate passed \$1.3 trillion spending bill shortly before 1 a.m. which prevented a government shutdown (Werner and Debonis 2018). Mostly recently, a Supreme Court confirmation vote on Justice Brett Kavanaugh occurred on a Saturday morning.

Indeed, many of the key votes in Congress, especially on legislation that passes by the narrowest

margins, often takes place outside of regular working hours. Panel (a) in Figure 1 presents the distribution of votes across time of day for the Congresses from 107th through 113th and shows voting can drag on long after 6 pm and well into the evening through midnight.⁸ In addition, fundraising has increasingly become important as elections become more competitive (Lee 2016), creating a long list of events for legislators and their staff to attend. Panel (b) in Figure 1 presents the distribution of event starting times.⁹ We calculate the proportion of events that started after regular business hours and find that 27% of the events started after 6 pm. If we change the threshold to 5 pm, the percentage of the events that started after business hours increases to 47%. These inflexible yet unpredictable late hours and weekend responsibilities are a challenge for child care. Keep in mind, these demanding schedules are a shared experience of both congressional staffers as well as their bosses.

Figure 1: Time Distribution of Congressional Activities



Like other occupations that show gender gap, the demanding, inflexible, yet unpredictable work

⁸We web-scraped the voting records from the govtrack (<https://www.govtrack.us/congress>) (accessed March 1, 2019).

⁹We examine the congressional events that the Sunlight Foundation, a non-profit organization that aims to promote transparency in politics, has collected. It launched the website called “Political Party Time” that collects invitations to political events, such as receptions and fundraising that connects politicians with donors, lobbyists, and other interested groups and individuals (see <http://politicalpartytime.org>) (accessed December 11, 2018). We analyze the events data from 2008 through 2014. There are 18,325 events during this period and the most of the events are described as fundraising receptions (e.g., breakfast, lunch, dinner, etc.). We have information on what time events are scheduled to start for 16,773 events.

schedule of congressional staff presents challenges for women, who continue to bear the majority of household and child care responsibilities (Lawless and Fox 2005) and could explain the gender distribution across the congressional staff hierarchy as demands increase both at work and at home and as women approach an age when they are considering child care. Indeed, the factors associated with the gender gap become increasingly important over the course of the life-cycle (Goldin 2014). While many Hill staffers are in their mid-twenties, young female staffers may recognize the challenges for them to have both career and family by observing the day-to-day responsibilities, inflexible schedules, and expectations faced by their superiors. They may come to view advancement in a congressional office as an impossibility for them or as a poor long-term career if they want to have children.¹⁰ Thus, gender differences in congressional offices may have little to do with political explanations and more to do with the inflexible schedules and long hours associated with many workplaces where we observe gender inequality.

If we observe a gender gap in experiences, roles, and promotion in congressional offices, it suggests that gender differences among elected and unelected policymakers may not be solely due to election-specific explanations. The underrepresentation of women policymakers is not an exclusively political phenomenon. Differences in ambition are not unique to political candidacy or even specific to political contexts. In fact, parallel gender differences are found in non-political occupations that exacerbate the different calculus women make when weighing child care and career priorities.

However, unlike most workplaces, issues of gender inequality are often at the forefront of the business of the day in congressional offices, especially in the offices of legislators who tout gender equality as one of their priorities. By running on platforms promising a commitment to gender equality, legislators face greater expectations when it comes to gender differences within their own offices. For these legislators, their commitment to gender equality is the product they are selling to the public. These legislators and their staff are engaging with policies related to gender equality and

¹⁰This argument is consistent with work showing that women still bear most of the household labor (Lawless and Fox 2005) and that party leaders view this burden as the primary reason why women do not run for office at the same rates as men (Sanbonmatsu 2006).

women's issues by working on related legislation, speeches, and interacting with advocacy groups. The political pressure and salience regarding gender equality in the workplace may lead these legislators to encourage and mentor the women in their offices for senior staff and policymaking roles and to be more aware of workplace flexibility issues.

Findings indicating that women need to be asked multiple times in order to run for office lend credence to the possibility that explicit encouragement from legislators and Chiefs of Staff could make the difference for the advancement of women staffers. Moreover, the women staffers that choose to work for such politicians likely hold strong views on gender equality and women's advancement themselves. Thus, while gender inequality in the workplace is not unique to the political arena, the political incentives to overcome these barriers and recruit women candidates (see Fowler 1993; Sanbonmatsu 2006) and promote women staffers is particularly salient within the political context.

If the pressure and salience of gender inequality in the political context does help to overcome barriers for women, we would expect to see variation based on the legislators' political commitment to gender equality. Democrats, for example, face more pressure and recruitment assistance from women's organizations to increase women's political representation than the Republican party (Crowder-Meyer and Cooperman 2018; Fox and Lawless 2010; Lawless and Fox 2010). Likewise, gender equality among staff is likely to be more salient factor in Democratic offices, mitigating the gender inequality in pay and promotion in comparison to Republican offices.

Alternatively, it is possible that Republican offices promote women in order to overcome their party's perceived weakness on issues of gender equality. One survey response implied this might be the case because it seemed to her that "Republicans want a female spokesperson."¹¹ However, Democrats have also faced negative press attention for a lack of gender equality in their own offices. For example, Senator Elizabeth Warren received scrutiny and accusations of hypocrisy over a controversy about whether she paid her female staffers less than the men in her office (Ernst 2017). It is possible both parties face pressure to promote women.

¹¹Quote from 2015 survey of female congressional staff, *National Journal* (<https://www.nationaljournal.com/s/52288/whats-like-be-woman-capitol-hill>) (accessed June 17, 2019).

Beyond partisan priorities, gender equality among staff could also be more salient for women legislators than for their male colleagues. For the same reasons we observe women legislators voting and advocating for priorities for women, we might expect to see them recruit and promote women in their offices. Female legislators' previous experiences with gender biases and barriers in their own histories would likely heighten their awareness to gender equality within their offices. It is also possible that congresswomen are more comfortable with women in the staff roles that are closest to the boss, similar to how some congressmen have expressed discomfort with being staffed (in particular, meeting alone) with women staffers.

We argue that while the demanding and inflexible schedules of congressional careers lead to gender inequities, factors particular to the political context mitigate these differences. Concerns about gender equity are going to be particularly salient in the context of the political workplace, especially among women and Democratic legislators, who tout their commitment to gender equality as a policy priority and who face pressure and receive more assistance from women's interest groups or policy demanders to recruit more women (Crowder-Meyer and Cooperman 2018; Fox and Lawless 2010; Lawless and Fox 2010).

Understanding gender differences in the opportunities and experiences of congressional staffers has important implications for our knowledge about women and politics beyond the unelected staff. First, considering questions of women's advancement and access to power in the context of congressional offices offers leverage in how we evaluate previous explanations for the underrepresentation of women. Second, congressional staff play an important role in policymaking. If women hold positions of power within congressional offices, it could suggest that priorities and perspectives of women are still being voiced in an overwhelmingly unrepresentative Congress. However, if women are facing barriers to policymaking roles, it further exacerbates the underrepresentation of the policy concerns that they themselves face. Taken together, while congressional staff are influential policymakers, it is the members of Congress who determine the hierarchy of influence.

Data Description and the Summary Statistics

We start with the list of all congressional staffers who enrolled in the payroll system in the US Congress for the period between 2001 and 2014. Legistorm, an online information service that provides information on career histories of congressional staff, assembles the congressional staff salary data from the official records of the House and Senate. Congress publishes a quarterly statement of disbursement (SOD), and the SOD reports all receipts and expenditures for congressional members, committees, and other offices within Congress.¹² Legistorm supplements the salary data with biographical information for staffers from available sources such as LinkedIn pages.¹³ We purchased the congressional staff data from Legistorm that includes the name of the congressional office, each staffer's name and title, gender¹⁴, pay period, and salary paid in that period. In this paper, our analysis focuses on personal staff who comprises 60% of the total staff in Congress. We exclude committee staff, party staff, and congressional support agency staff. Among personal staffers, we drop staffers if they were interns, part-time or temporary employees, shared employees, or drivers (based on their staff titles) to measure the number of full-time employees in congressional offices. Therefore, the remaining samples in our analysis consist of personal staffers in members' offices who worked more than 6 months in a given Congress.

Table 1 presents the summary statistics at the staff level. On average, more than 13,000 people received a positive payment from personal offices in the Congress in a given term and more than half of the personal staffers were women. The mean annual salary is around \$45,000. The turnover rate, which indicates the percentage of staffers who were enrolled in the payroll from a member's office in a given Congress but did not appear on the payroll in the subsequent Congress, is around 37% for personal staffers.

To examine whether congressional staffers are promoted and compensated differently by gender, we need to standardize staffers' ranking across different offices. To produce a comprehensive

¹²<https://disbursements.house.gov/archive.shtml> (accessed March 1, 2019).

¹³We have educational attainment information for 35% of the staffers in the payment directory.

¹⁴Legistorm coded staff gender based on their first name, LinkedIn page information, and the educational background (e.g., women's college). We have the information on gender for 99% of the staff in our dataset.

Table 1: Summary Statistics of Congressional Staff, 2001-2014

Congress	No. Staff ^a	Female (%)	Mean Salary(\$K) ^b	Turnover (%) ^c
107	13,197	53.7	44	36.8
108	13,502	53.9	46	37.1
109	13,425	53.0	44	37.3
110	13,802	52.8	46	35.8
111	13,843	53.5	47	39.3
112	13,279	52.6	46	39.3
113	12,726	51.5	42	-

Notes: The unit of observation is staff \times congress. Only personal office staff are included. **a.** Total number of personal office staffers who had a payment record and worked more than 6 months. **b.** This is the mean annual salary (in 2014 dollar terms). **c.** Percentage of staffers enrolled in the payroll in a given Congress but did not appear in the payroll in the subsequent Congress. (Source: Legistorm)

ranking of congressional staff, we relied on government (CRS reports) (Petersen, Reynolds and Wilhelm 2010; Petersen and Chausow 2016), academic (Davidson et al. 2018; Romzek and Utter 1996), and nonprofit organizations (e.g., Congressional Management Foundation)¹⁵ sources which provide standard congressional staff titles and descriptions of the positions. Using these resources, a former congressional staffer (one of the authors) read through the titles listed and categorized them based on the standard list of titles and ranked them (see Table A1 in the Appendix A).

The titles were ranked based on the hierarchy and chain of command within congressional offices, position qualifications, and on the position descriptions (e.g., policy, administrative).¹⁶ For example, the Chief of Staff is the first in command in a congressional office and, thus, has the highest rank (1). The Deputy Chief of Staff (also District Chief of Staff, State Director) is the second in command, reporting to the Chief of Staff, and is ranked (2) above the rest of the staff positions. The lowest ranking positions are entry level positions that require the least amount of experience and perform administrative or clerical office support, such as Staff Assistants (ranked at 7). Finally, staff positions that require policy expertise, whether legislative in nature (e.g., Leg-

¹⁵“Job Descriptions: House Office Sample.” *Congressional Management Foundation* (<http://www.congressfoundation.org/component/content/article/85/136-job-descriptions-house-office-sample>); “Senate Staff Employment Study Salary, Tenure, and Demographic Data: 1991-2001.” *Congressional Management Foundation* (http://www.congressfoundation.org/storage/documents/CMF_Pubs/cmfsenatesalarystudy1991-2001.pdf).

¹⁶For an extended discussion of our coding procedure and robustness checks see Appendix C (pages A11-A15).

islative Assistants), or involving the communication of policy positions and activities (e.g., Press Secretary) are ranked above positions that are primarily administrative (e.g., Executive Assistant, Scheduler).¹⁷

The standardization of staffer ranking matters especially when we compare wages and promotions *across* different congressional offices. However, we also compare compensation and promotions of congressional staffers within a member’s office. In those cases, even if each congressional office might use different ranking systems among congressional staffers, as long as the ranking system is stable within the member’s office, our analysis is immune to potential mistakes in the process of standardizing the rankings.¹⁸

Figure 2 presents the ratio of female staff by rank of staff and by party. Panel (a) presents the female ratio in the House of Representatives and panel (b) presents the female ratio in the Senate.¹⁹ While the ratio of female staffers at the lowest rank (7) is similar across parties and the chamber, there is a significant difference in the ratio of high-ranked female staff by party. Whereas Democratic legislators have over 40% of female staffers at the top rank, only 25% of the top-ranked position in Republican members’ offices are female staffers. This suggests that the promotion of female staffers within Congress may differ based on the party affiliation of the legislator whom they are serving. However, it is important to reiterate that across all of the conditions, women make up the majority of staff in the lowest-ranking positions (Rank 7), ruling out supply-side or pipeline explanations.

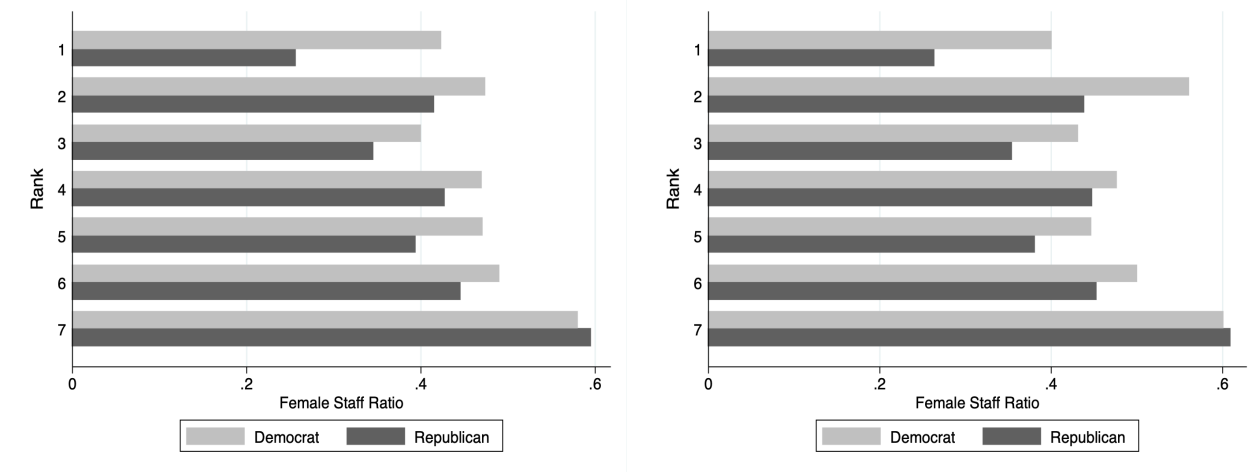
We create a dataset where the unit of observation is member \times staff \times rank \times congress for each chamber. For each staffer, we aggregate the total salary paid to a staffer in a given rank from each office by Congress. We calculate the total number of days that a staffer worked for a member’s office in a given rank by Congress. We also create a variable that indicates whether a staffer worked

¹⁷While Chiefs of Staff and Deputy Chiefs of Staff often manage administrative tasks, they are also responsible for the policy agenda and supervising the legislative staff and are included within the category of “Executive” above policy and press positions (Congressional Management Foundation report (http://www.congressfoundation.org/storage/documents/CMF_Pubs/cmfsenatesalarystudy1991-2001.pdf)).

¹⁸We consider alternative ranking schemes in the Appendix (see pages A11-A15) and replicate our analyses in Tables A10-A13. Our results are robust when using the alternative rankings.

¹⁹In Table A2 in the Appendix, we divide the offices into four types - Female Democrat, Male Democrat, Female Republican, and Male Republican- and presents the composition of female staff by ranks.

Figure 2: Ratio of Female Staff By Rank



(a) House of Representatives, 2001-2014
(Source: Legistorm)

(b) Senate, 2001-2014
(Source: Legistorm)

in a district or state field office as opposed to working in Washington D.C.

Gender Gap in Promotions in Congress

First, we examine gender differences in promotion. This analysis is particularly valuable because, as mentioned, women make up the majority of congressional staff even though they are heavily concentrated in lower-ranking positions. This is important because the hiring process on Capitol Hill occurs largely through promotion within or between offices, and there is a strong expectation that staffers “pay their dues.” In other words, it is expected that staffers start out as interns or in entry-level positions, even if they have graduate degrees. “Hill experience” is generally a requirement and is widely considered to be more valuable than graduate education, with some legislators even refusing to hire someone who had not interned in a Capitol Hill office first (Gale, 2014). Thus, if women are getting their foot in the door as Staff Assistants and in other entry-level roles, gender differences higher up the hierarchy become more puzzling.

We systematically examine the promotion of congressional staffers in the following way. We define a promotion in Congress t as the highest rank change between Congresses t and $t + 1$ for a

given staffer.²⁰ If a staffer left Congress after the time period t , then we do not have a record of promotion for those staffers.

We also include variables that capture the overall gender composition of staffers to study gender spillover - whether a gender composition within a member's office affects the promotion of female staffers. Having female at higher ranks or gender composition among peers could have either positive or negative spillover effects on the advancement of female workers (i.e., [Kunze and Miller 2017](#)). We observe the population of staffers in each office during a given Congress at a given rank. We calculate the female staff shares among the staffers at the same rank (*Female Peer Share*) and the female staff shares of bosses working at higher ranks in the same member's office in a given Congress (*Female Boss Share*).

We estimate the model below to examine staffer promotion in the Congress.

$$\begin{aligned}
 Promotion_{ijt} = & \alpha_j + \alpha_t + \beta_1 Female_i + \Gamma X_{ijt} \\
 & + \beta_2 FemalePeerShare_{ijt} + \beta_3 FemalePeerShare_{ijt} \times Female_i \\
 & + \beta_4 FemaleBossShare_{ijt} + \beta_5 FemaleBossShare_{ijt} \times Female_i + \varepsilon_{ijt}
 \end{aligned} \tag{1}$$

, where i, j, t indicate staffer, member, and Congress, respectively. X_{ijt} includes a set of control variables such as members' characteristics and a staffer's educational attainment. One important staffer-level characteristic is a staffer's Hill experience. Work experience in labor market has been considered one of the central factors in explaining gender gap ([Blau and Kahn 2017](#)) and this may be not an exception in Congress. Male staffers might have worked longer on the Hill than female staffers and this experience gap may drive the gender pay gap. Given that our dataset starts in 2001, we do not have accurate information for staffers who appear in the 107th Congress regarding when those staffers first started their careers in Congress. Therefore, we focus on staffers who first appear during the 108th Congress or later in our data and calculate their experience in

²⁰There are some cases where a staffer's rank changed within a Congress. 12.5% of the House staffers and 11.6% of the Senate staffers experienced a promotion within a Congress. In those cases, we take the highest rank in a given Congress to compare promotions between Congresses.

each Congress during which they appear.²¹ α_j and α_t denote member- and Congress fixed effects.

The estimated results are reported in Table 2.²² Panel A presents the results from the House and panel B presents the results from the Senate. In the House, we find that female staffers are promoted less than male staffers (column 1). The mean value of the outcome variable (*Promotion*) for male staffers is 0.31. Column (1) suggests that female staffers are 32% less likely to be promoted than male staffers and Democratic staffers experience 11% less promotion than Republican staffers. Column (2) suggests that compared to Republican male staffers, which is a baseline group, Republican female staffers (groups that are represented by the coefficient on the *Female Staff* variable) are 38% less likely to be promoted. Male staffers who work for Democratic members (groups that are represented by the coefficient on *Democrat*) are promoted 17% less than Republican male staffers. Female staffers who are hired by Democratic members tend to experience more promotions than female staffers hired by Republicans (coefficient on the *Female* \times *Democrat* variable) but even this effect does not fully overcome the gender promotion gap among congressional staffers. Female staffers who work for Democratic members are promoted 39.7% less than male staffers who work for Republicans.²³

This partisan difference disappears after we control for staffers' educational background for a subset of staffers whose educational attainment information is available (column 3). This suggests that Democratic members tend to hire more highly educated women as staffers who may experience faster promotions. To explore this mechanism, we examine partisan differences in educational attainment for staffers. Table A3 in the Appendix shows that staffers who work for Democratic members tend to have higher educational attainment but the gap is larger among female staffers.

²¹For example, a staffer who first appeared in the 108th Congress will be coded to have 4 years of experience if the same staffer appeared in the 109th Congress. It is possible that some staffers return to Congress after working in the private sector for a while. However, this type of "revolving door" from Congress to private sector to Congress is not very common among congressional staffers. This pattern of a constant revolving door is more common among executive branch bureaucrats. When we examine the ranking of the staffers who first appeared in the 108th Congress, 78% of them were at ranks below or equal to Legislative Assistant. We also analyze the promotion patterns for all staffers in the dataset (without including staff experience) and the results are presented in Table A4 in the Appendix. The results are largely consistent.

²²Full regression results are presented in Tables A5 and A6 in the Appendix.

²³The calculation is following: $\frac{(-0.127 - 0.0582 + 0.0541)}{0.33} = -0.397$.

This implies that the partisan differences in female staff’s promotion could be driven by differences in their educational attainment. Results under columns (4) and (5) show that there are significant gender spillovers in promotion. If there are more women in the same rank in a member’s office, the gender gap in promotion becomes larger. Having more female staffers in higher ranks than her own rank is not systematically related to a female staffer’s promotion.

In the Senate, we observe similar patterns. Women consistently experience slower promotion than male staffers. Given that the mean value for the outcome value (*promotion*) for male staffers in the Senate is 0.21, which is significantly lower than the House, the result on column 1 suggests that female staffers experience 28% less promotion than their male counterparts. There is no partisan difference in the promotional pattern. Column (2) suggests that female staffers who work for Democratic members experience faster promotions but this effect is weakened once we control for a staffer’s educational background. As Table A3 shows, the partisan difference in educational attainment among female staffers is much larger than among male staffers in the Senate. We also observe some gender spillover effects in the Senate. In particular, having more female staff in the same rank reduces a female staffer’s promotion.²⁴

Gender Gap in Compensation in Congress

In this section, we present the results that document a significant gender pay gap among congressional staffers. First, to examine whether there is any gender pay gap, we estimate the following model:

$$Pay_{ijt} = \alpha_j + \alpha_t + \Gamma S_{ijt} + \Pi M_{jt} + \varepsilon_{ijt} \quad (2)$$

, where i, j, t indicate staffer, member, and Congress, respectively. S_{ijt} includes staffer-specific variables such as gender, rank, days of employment in a given rank, years of Hill experience, and educational background. M_{jt} includes member-specific variables such as party, leadership, seniority, and gender. Member- and Congress-fixed effects are included (α_j, α_t).

²⁴We do not find significant results when the gender of the legislator is included in the models in Table 2 due to the correlation between the party and gender of the legislators.

Table 2: Gender Gap in Promotion

	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	-0.100*** (0.00911)	-0.127*** (0.0128)	-0.117*** (0.0180)	-0.0189 (0.0328)	0.0302 (0.0477)
Democrat	-0.0310** (0.0107)	-0.0582*** (0.0148)	-0.0367 (0.0191)		
Female Staff × Democrat		0.0541** (0.0178)	0.0251 (0.0259)		
Female Peer Share				0.103** (0.0361)	0.151** (0.0529)
Female Boss Share				-0.00684 (0.0335)	0.0146 (0.0484)
Female Staff × Female Peer Share				-0.138** (0.0520)	-0.230** (0.0747)
Female Staff × Female Boss Share				-0.0618 (0.0394)	-0.107 (0.0559)
Member Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	29222	29222	15710	26717	14291
adj. <i>R</i> ²	0.026	0.026	0.049	0.022	0.035
Panel B: Senate					
Female Staff	-0.0607*** (0.0131)	-0.0959*** (0.0178)	-0.106*** (0.0293)	0.0409 (0.0496)	0.0219 (0.0729)
Democrat	0.00466 (0.0157)	-0.0272 (0.0189)	-0.0217 (0.0340)		
Female Staff × Democrat		0.0636* (0.0253)	0.0549 (0.0378)		
Female Peer Share				0.0865 (0.0676)	0.0753 (0.0942)
Female Boss Share				-0.0457 (0.0628)	-0.0661 (0.0941)
Female Staff × Female Peer Share				-0.200* (0.0850)	-0.180 (0.130)
Female Staff × Female Boss Share				-0.0173 (0.0600)	-0.0161 (0.0857)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	12596	12596	6392	12004	6024
adj. <i>R</i> ²	0.013	0.013	0.028	0.018	0.030

Notes: The unit of observation is staffer × member's office × congress. Only personal office staff are included. Standard errors clustered at the member's office level are in parentheses. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Similar to the promotion analysis, our main analysis on compensation focuses on staffers who started their career from the 108th Congress so that we can control for the Hill experience of each staffer.²⁵ Panel A in Table 3 presents the results for the House of Representatives.²⁶ All the specifications include member-level control variables and Congress FE. Columns (4) and (5) include a member FE, and Column (5) restricts the analysis to staffers for whom we have educational information.

Column (1) suggests that there is no significant gender pay gap. However, once we include an interaction term, *Female Staff* \times *Democrat*, partisan differences in the gender gap in compensation emerges. The results in column (2) suggest that compared to Republican male staffers, the base-line group, whose mean annual compensation is \$55,675, Republican female staffers at the same rank with similar characteristics receive \$1,607 less. Democratic male staffers (the coefficient on the variable *Democrat*) receives \$1,529.4 less than Republican male staffers. Democratic female staffers do better than Republican female staffers and Democratic male staffers, but they are still paid -\$997.7 less than Republican male staffers. Partisan differences in the gender gap are weakened once we control for staffers' educational background (column 3). We include an additional interaction term (*Female* \times *Democrat* \times *Female Member*) to see whether there is an additional positive impact on the compensation of female staffers who work for Democratic female members. The results in column (3) suggest that Democratic female legislators pay their female staffers more.

Panel B in Table 3 presents the results for the Senate.²⁷ Female staffers are consistently paid less and there is no significant difference across parties. For example, given that the average salary of a staffer in the Senate is around \$60,000, the result in column (1) suggests that female staffers are paid 5% less than their male counterparts. The inconsistencies across chambers could be due to differences in educational attainment across House and Senate staffers. Staffers in the Senate tend to be more highly educated than in the House, especially among staffers who work for Republicans

²⁵Table A7 in the Appendix presents the analysis that include all staffers (without including their Hill experience) and the results are similar.

²⁶A full regression result is reported in Table A8 in the Appendix.

²⁷A full regression result is reported in Table A9 in the Appendix.

Table 3: Gender Gap in Compensation

Outcome = Total Salary (\$)	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	-524.9 (317.6)	-1607.0*** (452.0)	-1602.7*** (451.9)	-1542.4*** (440.1)	-1091.2 (668.8)
Female Staff × Democrat		2138.7*** (627.9)	1689.9* (687.9)	1979.2** (694.8)	2647.2* (1041.5)
Female Staff × Democrat × Female Member			1724.4* (861.5)	493.2 (894.9)	-499.0 (1334.1)
Democrat	-458.8 (503.3)	-1529.4* (607.4)	-1448.1* (608.1)		
Female Member	744.8 (538.1)	733.2 (537.7)	135.1 (622.6)		
Hill Experience	1486.6*** (99.32)	1488.5*** (99.18)	1489.7*** (99.18)	1528.4*** (101.0)	1538.4*** (136.1)
JD/PhD					4279.2*** (890.2)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	51813	51813	51813	51813	24865
adj. <i>R</i> ²	0.751	0.751	0.751	0.760	0.771
Panel B: Senate					
Female Staff	-2962.5*** (749.9)	-3479.7*** (1021.4)	-3483.6*** (1021.3)	-3433.8** (1032.5)	-4095.0* (1772.0)
Female Staff × Democrat		974.1 (1480.8)	543.9 (1645.1)	640.4 (1568.7)	-1520.8 (2402.7)
Female Staff × Democrat × Female Member			1639.9 (2307.5)	2109.4 (2255.2)	7305.6** (2450.4)
Democrat	180.3 (1272.6)	-333.3 (1353.0)	-238.7 (1349.8)		
Female Member	-2125.8 (1480.7)	-2130.5 (1483.3)	-2754.3 (1797.4)		
Hill Experience	4041.6*** (165.3)	4041.4*** (165.3)	4044.8*** (165.2)	4081.2*** (164.0)	3594.6*** (226.4)
JD/PhD					4279.2*** (890.2)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	46185	46185	46185	46185	18728
adj. <i>R</i> ²	0.663	0.663	0.663	0.671	0.695

Notes: The unit of observation is staffer × rank × member × Congress. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Only personal office staff are included. Standard errors clustered at the member-level are reported in the parentheses.

(see Table A3 in the Appendix). Given that the partisan differences we observe in the promotions and compensation of female staffers in the House are mainly driven by the Democrats hiring more highly educated women, this effect could be muted in the Senate if the educational attainment gap between the parties is smaller.

Tracing the Career Path of Congressional Staff by Gender

To further understand gender differences in the careers of staff, we estimate regressions that include rank dummy, a female staff dummy, and an interaction of rank and female staff on promotions and compensation. Panel A in Table 4 presents the coefficients on the interaction terms on promotions of staff. The results suggest that there are two critical junctures that female staffers face in promotions within Congress: from rank 7 to rank 6 and from rank 5 to rank 4. Panel (B) in Table 4 presents the coefficients on the interaction terms on the compensation of staff. The results suggest that the gender gap in promotion is the most salient among female staffers in the middle range ranks.

When we examine the age distribution of staff whose age information is available from Legistorm,²⁸ the mean age of female staffers in the middle ranks (3, 4, 5) is 30.8.²⁹ This overlaps with the age that college-educated women become first-time mothers (30.3) (Bui and Miller 2018). The results suggest that the inflexible, unpredictable long hours of congressional schedules are particularly challenging as female staffers start to have a family, when most of them are in the middle ranks in the hierarchy of personal offices in Congress. Challenges in balancing work and family responsibilities may make it difficult for female staffers to be “on call” at all times to deal with issues that may arise and to take on unpredictable schedules.³⁰ This may affect female staff’s experience and knowledge, their interaction with their boss, donors and voters, which could result in gender gaps in promotion and compensation.

²⁸Information on birth year and the year that staffers graduated from college is available for 1/3 of the staffers in the data.

²⁹The mean age of female staffers in the top ranks (1 and 2) is 37.9 and the mean age of female staffers in the bottom ranks (6, and 7) is 24.

³⁰See A1 in the Appendix for an example of an advertisement that states that the Press Secretary must “fulfill an on-call role during weekends.”

Table 4: Gender Gap by Staff Rank

	House		Senate	
	(1)	(2)	(3)	(4)
Panel A. Promotions				
Rank 2 × Female Staff	0.0255 (0.0209)	0.0464 (0.0381)	-0.0479* (0.0200)	-0.0628 (0.0354)
Rank 3 × Female Staff	-0.0646 (0.0379)	-0.0938* (0.0447)	-0.0462 (0.0723)	-0.0305 (0.0854)
Rank 4 × Female Staff	-0.0400 (0.0271)	-0.0547 (0.0374)	-0.0320 (0.0397)	-0.0565 (0.0512)
Rank 5 × Female Staff	-0.0736*** (0.0218)	-0.0790** (0.0293)	-0.0512* (0.0241)	-0.0836** (0.0308)
Rank 6 × Female Staff	-0.0322 (0.0247)	-0.0352 (0.0339)	-0.00281 (0.0193)	0.0122 (0.0272)
Rank 7 × Female Staff	-0.143*** (0.0152)	-0.179*** (0.0266)	-0.0835*** (0.0171)	-0.0938*** (0.0275)
Controls	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
Member FE	✓	✓	✓	✓
Staff Education Included		✓		✓
<i>N</i>	28291	15091	14799	7717
adj. <i>R</i> ²	0.025	0.037	0.017	0.029
Panel B. Compensation				
Rank 1 × Female Staff	-10363.9* (4923.7)	-9476.6 (5879.0)	-9574.5 (11367.0)	7791.9 (12546.8)
Rank 2 × Female Staff	672.7 (3214.5)	3058.5 (4215.4)	-9553.5 (5202.1)	-2768.8 (7350.3)
Rank 3 × Female Staff	-4947.1* (2161.5)	-3060.2 (2125.4)	-32977.5*** (9127.3)	-27364.9** (10061.5)
Rank 4 × Female Staff	-2578.5** (995.8)	-1580.5 (1253.1)	-7047.5* (3407.2)	-8718.9* (4227.9)
Rank 5 × Female Staff	49.10 (578.7)	473.1 (717.9)	-6058.9** (1832.5)	-8853.3*** (2111.5)
Rank 6 × Female Staff	-460.3 (479.5)	-716.2 (643.3)	-104.4 (765.9)	1340.9 (963.6)
Rank 7 × Female Staff	-25.71 (352.2)	794.7 (479.9)	596.2 (606.1)	1978.1* (944.9)
Controls	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
District FE	✓	✓		
State FE			✓	✓
Staff Education Included		✓		✓
<i>N</i>	51813	24865	27420	13567
adj. <i>R</i> ²	0.777	0.794	0.707	0.718

Notes: The unit of observation is staffer × rank × member × Congress. The numbers report the coefficients for interaction terms between staff rank and female staff dummy. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Includes only personal office staff. Standard errors clustered at the member-level are reported in parentheses.

The differences between the House and Senate results in Panel B of Table 4 offer further support for this interpretation. There are several general differences between the staff who work for the House versus the Senate that could contribute to chamber differences. Senate staff tend to be older and more experienced than House staffers. In fact, Senate staffers are sometimes “promoted” from House offices. The difference in age alone likely produces differences in our results, since women’s household/family demands are often structured by their age (when they begin thinking about having children). This age difference could explain why the gender gap is salient starting at Rank 5 and is more consistently robust for Ranks 5, 4, and 3 (Table 4, Panel B) in the Senate in comparison with the House. Ranks 5, 4, and 3 include Legislative Assistants, Press Secretaries, Communication Directors, and Legislative Directors.³¹ The average ages for these positions range from approximately 29 to 33 in the House and 32 to 38 in the Senate.³²

Another possible explanation for the bottleneck of women at Rank 5 (Legislative Assistants) could be related to gender differences in the substantive roles and responsibilities staffers are assigned. If men are assigned policy issues that are considered of broader importance, it could allow men to accumulate experience, expertise, and connections that might make them more marketable. If women are assigned a narrower range of substantive issues (i.e., stereotypical “women’s issues”), it could further limit their opportunities to compete for senior positions.³³ We consider this possibility by examining Legistorm data on the policy issues Legislative Assistants were assigned (referred to as “legislative portfolios”) during the 113th Congress.

Table 5 presents the top 10 issue areas assigned to female and male staffers.³⁴ The statistics suggest that women are more likely to be assigned areas that are traditionally considered “women’s issues” (i.e., women’s issues, health, abortion, families). Male staffers’ issue assignments are

³¹For additional discussion about chamber differences in treatment of some positions (e.g., Executive Assistants) and the implications for our results and theory (e.g., results at Rank 7) see pages A10-11 of Section C in the Appendix.

³²See the 2001 Senate Staff Employment Study (http://www.congressfoundation.org/storage/documents/CMF_Pubs/cmfsenatesalarystudy2001.pdf)

³³We are grateful to an anonymous reviewer for this suggestion

³⁴Legistorm reaches out to each individual member office to track the main point person(s) assigned to each specific issue (mostly staffers with Legislative Assistant title). Legistorm uses a list of issue areas that are similar to the Library of Congress’ categorization with a few differences. Quarterly Congressional Yellow Book also provides the information on issue assignments by legislative staffers. There are 35 issue areas and a staffer is responsible for 5 issues on average.

Table 5: Top 10 Issue Assignment by Staff Gender, 113th Congress

Female Staff		Male Staff	
Rank	Issue	Rank	Issue
1	Women’s Issues ^a	1	Armed Forces and National Security
2	Health	2	Economics and Public Finance
3	Abortion	3	Finance and Financial Sector
4	Families	4	Science and Technology
5	Social Welfare	5	Transportation and Public Works
6	Education	6	Government Operations and Politics
7	Arts, Culture and Religion	7	Taxation
8	Labor and Employment	8	Commerce
9	Civil Rights and Liberties	9	Foreign Trade and International Finance
10	Law	10	Energy

Notes: **a.** This category includes issues such as equal pay, gender equality, Title IX, and Violence Against Women Act. (Source: Legistorm, 2001-2014)

starkly different from female staff and are concentrated in finance, foreign policy, taxes and energy.³⁵ Taking into account that bills addressing “women’s issues” are less likely to become law (Volden, Wiseman and Wittmer, 2018), this preliminary examination could suggest that female staffers who work on “women’s issues” may have less legislative experience and less interaction with interest groups, which could affect a staffer’s marketability (Shepherd and You 2019).

We view gender differences in issue assignments as another possible contributing, although not competing, explanation. Gender differences in issue portfolios could be exacerbating differences for the women who continue to advance, creating even greater disparities in the most powerful positions in the office. Of course, this examination of gender differences in issue assignments is preliminary. Further study is needed to more fully understand the gender gap in substantive roles as our study is limited in its ability to untangle these contributing (though not mutually exclusive) causal mechanisms.

³⁵There is no significant difference between Democrats and Republicans in terms of staffers’ issue responsibility by gender.

Conclusion

While women comprise a majority of congressional staff, our results indicate that gender inequities persist for these unelected policymakers. First, we show that women are concentrated in lower-ranking, clerical positions. Second, we show that female staffers are paid less than their male counterparts at the same rank. Third, while women make up the majority of the promotion pool, they experience slower promotion than male staffers. Fourth, these inequities vary based on the party and gender of the legislator, with Democrats and women legislators paying and promoting women more in comparison to Republican congressmen.

These findings are consistent with our argument that the congressional office context is similar to other careers associated with the gender gap. The demanding, inflexible work schedule could hamper women's ability to advance and may discourage them from senior staff positions due to traditional gender roles that expect women to carry the majority of child care and household labor. However, we argue that political careers are unique because issues of gender equality are often on the daily agenda, and so legislators that prioritize these issues on their political agendas will also be more aware and responsive to the gender gap within their own offices. Democratic and women legislators may encourage the female staff in their offices, explicitly recruit them for senior staff positions, and build office norms and culture that mitigate the barriers to women's advancement in staff roles. This interpretation of our results is consistent with work on the representation of women in elected office that finds that women perform as well as men in elections (e.g., [Dolan 2004](#); [Fox 1998](#); [Thompson and Steckenrider 1997](#)) and identifies differences in ambition ([Lawless and Fox 2005](#)) and recruitment ([Crowder-Meyer and Cooperman 2018](#); [Lawless and Fox 2005, 2010](#)) as explanations for the underrepresentation of women.

To be clear, we are not arguing that discrimination and gender biases do not play a critical role in gender differences among staff. In fact, we would argue that gender biases are implicit in our theory. The organizational structure of Congress alone does not induce gender differences; the effects of traditional gender socialization creates expectations that women bear the majority of child

care and household responsibilities. Moreover, legislators' attention to issues of gender equality among their staff and workplace flexibility could be interpreted as a choice not to punish women for the greater societal demands placed on them by traditional gender roles and expectations. Of course, more explicit discrimination on the part of both legislators and staff likely exacerbates the barriers women experience on Capitol Hill.

Alternatively, the offices of Democrats and congresswomen may also attract women who are more ambitious and qualified and who prioritize their careers. In fact, if we assume women's pursuit of advanced degrees is associated with differences in how women weigh career and child care priorities, our results showing that Democratic congresswomen tend to hire more highly educated women suggests that the female staffers who go to work for Democratic women might prioritize their career in relation to household responsibilities differently than women who go to work for Republican men. In other words, perhaps female staffers for Democratic congresswomen are more likely to choose not to have children or to delay having children. Their counterparts in the offices of Republican congressmen might prioritize staying at home full or part time once they have children.

Our results suggest that the underrepresentation of women is not solely due to institutional or situational explanations that are particular to elections like incumbency advantage or the historical underrepresentation of women in careers that are typical stepping stones to elected offices. Our results suggest that an increase of women in pipeline professions may not solve the problem of underrepresentation if women are already in the congressional staff pipeline, but still not advancing to senior positions.

Our findings make clear that discussions about women in politics should include examinations of the unelected women. These unelected representatives and policymakers can have an impact on policy positions and legislative priorities, but not if they are impeded from advancing within the hierarchy of congressional offices. This paper is a step towards advancing our understanding of the experiences, advancement, and consequences of female congressional staff, and several important questions remain. For example, do women on congressional staffs, and their concentrations within the hierarchy, influence representation and legislative outputs? Do female staffers affect legislative

styles, productivity, and legislative effectiveness? Do we observe gender differences in where staffers land on the other side of the revolving door if women are being assigned substantive roles and issues that make them less marketable in the lobbying industry (Shepherd and You 2019)? Our preliminary examination on gender differences in policy issue assignments demands further study into the gender gap in the substantive roles women fill within the congressional staff context as well.

With the growing number of female candidates and women getting involved in politics, we suspect that congressional staffs may also see an increase of women at the top of the staff hierarchy. In fact, Congress recently tasked the House Select Committee on the Modernization of Congress with addressing “inclusion, diversity, and retention among congressional staff,”³⁶ and the House recently expanded its on-site child care facilities to address the problem (Tully-McManus, 2018). Our findings have implications for the effectiveness of their efforts to recruit and retain talented women staffers. Yet, the remaining questions call attention to the need for future research on what this will mean for women’s representation as well as the broader implications for public policy and quality of governance. It is important to know whether the congressional offices producing legislation that often has an inordinate impact on women, such as workplace flexibility, equal pay, and anti-discrimination laws, are themselves suffering from gender inequality.

³⁶<https://modernizecongress.house.gov/news/press-releases/hearing-diversity-and-retention>

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A Appendix: Categorization of Congressional Ranking

Table A1: Staff Titles, Descriptions, Categorization, and Rank

Rank	Category	Title	Other Common Titles	Description
1	Executive	Chief of Staff	DC Chief of Staff (CoS)	Head of office, chief policy adviser, reports to MC
2	Executive	Deputy Chief of Staff	State/District Director	Second in command, report to Chief of Staff
3	Policy & Press	Legislative Director	Senior Adviser, Policy Director	Oversee legislative/policy staff & operations
4	Policy & Press	Communications Dir./Press Secretary	Communications Advisor/Director	Oversee press/media staff & operations, spokesperson
5	Policy & Press	Legislative Assistant	Legislative Counsel, Policy Adviser	Manages legislative portfolio of assigned policy issues
6	Policy & Press Support Staff	Legislative Correspondent	Director of Correspondence	Oversee incoming constituent mail & outgoing responses
6	Policy & Press Support Staff	Deputy Press Secretary	Press Assistant	Assist Press Secretary, write press releases/speeches
6	Policy & Press Support Staff	Specials Director	Director of Special Projects	Pursue grants, earmarks, & local projects, appropriations
7	Administrative/District Support	Deputy District Director	Deputy State Director	Assist District/State Director
7	Administrative/District Support	Executive Assistant	Administrative Assistant, Scheduler	Maintain office accounts, scheduling, MC's travel
7	Administrative/District Support	Caseworker	Constituency service coordinator	Manage constituency service
7	Administrative/District Support	Office Manger	Executive Assistant, System Administrator	Manage office equipment, supplies, office accounts
7	Administrative/District Support	Staff Assistant	Assistant to Chief of Staff, Special Assistant	Manage phone/front office, tours/flag requests, assist staff

B Appendix: Tables

Table A2: Female Staff Composition

Staff Rank	Number of Staff ^a	Female Staff Ratio by Type of Office ^b				
		All Members	Female Democrats	Male Democrats	Female Republicans	Male Republicans
<i>Panel A. House</i>						
Rank 1 (Top)	4,871	.33	.48	.40	.27	.25
Rank 2	3,142	.44	.51	.46	.61	.39
Rank 3	3,971	.37	.44	.38	.30	.35
Rank 4	4,873	.44	.48	.46	.43	.42
Rank 5	13,021	.43	.49	.46	.41	.39
Rank 6	8,218	.46	.45	.50	.45	.44
Rank 7 (Low)	48,111	.58	.60	.57	.61	.59
<i>Panel B. Senate</i>						
Rank 1 (Top)	1,320	.33	.47	.37	.32	.25
Rank 2	2,130	.49	.60	.53	.44	.43
Rank 3	1,215	.39	.40	.43	.30	.36
Rank 4	1,941	.46	.43	.49	.42	.45
Rank 5	7,592	.41	.47	.43	.33	.38
Rank 6	8,089	.47	.49	.50	.40	.45
Rank 7 (Low)	23,921	.60	.60	.59	.62	.60

Notes: The unit of observation is member's office \times congress \times staff \times ranking. **a.** The total number of personal office staffers at each rank who had a payment record and worked more than 6 months. **b.** Numbers under this section present the mean ratio of female staff across all types of offices at each rank. (Source: Legistorm, 2001-2014)

Table A3: Partisan Difference in Educational Background of Staff

	All		Female		Male	
	D	R	D	R	D	R
<i>Panel A. House</i>						
Educational Information Available	.34	.38	.32	.33	.37	.44
Graduate Degree	.46	.33	.46	.31	.45	.35
JD/PhD	.17	.12	.16	.11	.18	.13
Elite University Graduate	.15	.07	.16	.07	.14	.07
<i>Panel B. Senate</i>						
Educational Information Available	.41	.37	.39	.32	.43	.42
Graduate Degree	.46	.38	.45	.32	.46	.43
JD/PhD	.18	.16	.16	.12	.21	.19
Elite University Graduate	.20	.11	.20	.09	.21	.13

Notes: Numbers indicate ratios. **D** indicates Democrats and **R** indicates Republicans. *Educational Information Available* variable indicates the ratio of staffers whose educational attainment information is available in Legistorm’s data. *Graduate Degree* variable indicates 1 if a staff acquired the graduate degree. *JD/PhD* variable indicates 1 if a staffer acquired a JD or/and PhD degree. *Elite University Graduate* variable indicates 1 if a staffer graduated (either college or a graduate school) from the top 29 universities whose median undergraduate student scored 1400 or higher in the combined SAT Critical Reading and Math (Wai 2013). (Source: Legistorm, 2001-2014)

Table A4: Gender Gap in Promotion - Including All Staffers

	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	-0.111*** (0.00733)	-0.135*** (0.0107)	-0.123*** (0.0169)	-0.0756** (0.0267)	-0.0439 (0.0438)
Female Staff × Democrat		0.0473*** (0.0140)	0.0340 (0.0229)		
Female Staff × Female Peer Share				-0.0953* (0.0410)	-0.154* (0.0651)
Female Staff × Female Boss Share				-0.00853 (0.0335)	-0.0367 (0.0548)
Member Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	52585	52585	23132	49209	21033
adj. <i>R</i> ²	0.021	0.021	0.047	0.021	0.033
Panel B: Senate					
Female Staff	-0.0640*** (0.00881)	-0.0913*** (0.0121)	-0.0640** (0.0214)	-0.0364 (0.0344)	-0.0723 (0.0512)
Female Staff × Democrat		0.0517** (0.0163)	0.0209 (0.0274)		
Female Staff × Female Peer Share				-0.00893 (0.0583)	0.115 (0.0920)
Female Staff × Female Boss Share				-0.0569 (0.0465)	-0.0926 (0.0709)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	27285	27285	11727	26448	11155
adj. <i>R</i> ²	0.011	0.011	0.026	0.014	0.024

Notes: The unit of observation is staffer × member's office × congress. Only personal office staff are included. Standard errors clustered at the member's office level are in parentheses. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A5: Gender Gap in Promotion - Full Results (House)

	(1)	(2)	(3)	(4)	(5)
Female Staff	-0.100*** (0.00911)	-0.127*** (0.0128)	-0.117*** (0.0180)	-0.0189 (0.0328)	0.0302 (0.0477)
Democrat	-0.0310** (0.0107)	-0.0582*** (0.0148)	-0.0367 (0.0191)		
Female Staff × Democrat		0.0541** (0.0178)	0.0251 (0.0259)		
Female Staff × Female Peer Share				-0.138** (0.0520)	-0.230** (0.0747)
Female Staff × Female Boss Share				-0.0618 (0.0394)	-0.107 (0.0559)
Female Peer Share				0.103** (0.0361)	0.151** (0.0529)
Female Boss Share				-0.00684 (0.0335)	0.0146 (0.0484)
Member's Last Term	0.0435* (0.0184)	0.0440* (0.0184)	0.0391 (0.0236)	0.0187 (0.0275)	-0.0143 (0.0415)
Majority Party	-0.00392 (0.0131)	-0.00423 (0.0131)	0.0117 (0.0185)	-0.00478 (0.0176)	0.0310 (0.0270)
Committee Chair	-0.0178 (0.0264)	-0.0182 (0.0265)	-0.0165 (0.0346)	-0.0213 (0.0336)	-0.0272 (0.0532)
Subcommittee Chair	-0.0126 (0.0147)	-0.0125 (0.0147)	-0.00976 (0.0208)	-0.0172 (0.0224)	-0.0231 (0.0340)
Seniority	-0.00330* (0.00152)	-0.00328* (0.00152)	-0.00307 (0.00165)	0.138** (0.0521)	0.0317 (0.142)
Majority Leader	-0.0281 (0.0218)	-0.0288 (0.0217)	-0.0483 (0.0322)	-0.0303 (0.0407)	-0.0646 (0.0657)
Minority Leader	0.0474 (0.0411)	0.0477 (0.0409)	0.0577 (0.0491)	0.0689 (0.0527)	0.111 (0.0842)
Powerful Committee	0.0206 (0.0125)	0.0212 (0.0126)	0.0277 (0.0155)	0.0223 (0.0254)	0.0322 (0.0383)
Female Member	-0.00546 (0.0128)	-0.00568 (0.0128)	0.00242 (0.0169)		
Rank	0.0572*** (0.00227)	0.0576*** (0.00227)	0.0887*** (0.00356)	0.0514*** (0.00413)	0.0867*** (0.00656)
(ln) Total Work Days	0.0394*** (0.00407)	0.0397*** (0.00406)	0.0600*** (0.00580)	0.0431*** (0.00450)	0.0661*** (0.00677)
District Staff	-0.137*** (0.0123)	-0.137*** (0.0123)	-0.132*** (0.0205)	-0.156*** (0.0137)	-0.145*** (0.0235)
Part Time	-0.156*** (0.0296)	-0.155*** (0.0337)	-0.237*** (0.0534)	-0.0671 (0.0732)	-0.447*** (0.0590)
Hill Experience	-0.00167 (0.00266)	-0.00165 (0.00266)	0.00429 (0.00363)	-0.00145 (0.00310)	0.00415 (0.00450)
Graduate Degree			0.0214 (0.0159)		0.0329 (0.0195)
JD/PhD			-0.0226 (0.0203)		-0.0363 (0.0262)
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
N	29222	29222	15710	26717	14291
adj. R ²	0.026	0.026	0.049	0.022	0.035

Notes: The unit of observation is staffer × member's office × congress. Only personal office staff are included. Standard errors clustered at the member's office level are in parentheses. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A6: Gender Gap in Promotion - Full Results (Senate)

	(1)	(2)	(3)	(4)	(5)
Female Staff	-0.0607*** (0.0131)	-0.0959*** (0.0178)	-0.106*** (0.0293)	0.0409 (0.0496)	0.0219 (0.0729)
Democrat	0.00466 (0.0157)	-0.0272 (0.0189)	-0.0217 (0.0340)		
Female Staff × Democrat		0.0636* (0.0253)	0.0549 (0.0378)		
Female Peer Share				0.0865 (0.0676)	0.0753 (0.0942)
Female Boss Shar				-0.0457 (0.0628)	-0.0661 (0.0941)
Female Staff × Female Peer Share				-0.200* (0.0850)	-0.180 (0.130)
Female Staff × Female Boss Share				-0.0173 (0.0600)	-0.0161 (0.0857)
Member's Last Term	0.0130 (0.0282)	0.0129 (0.0282)	0.0371 (0.0399)	0.000816 (0.0378)	-0.0159 (0.0554)
Majority Party	0.0390 (0.0359)	0.0386 (0.0358)	0.00655 (0.0456)	0.0547 (0.0583)	-0.0157 (0.0596)
Committee Chair	-0.0206 (0.0210)	-0.0197 (0.0209)	-0.0518 (0.0277)	-0.0167 (0.0295)	-0.0388 (0.0397)
Subcommittee Chair	-0.0372 (0.0299)	-0.0375 (0.0299)	-0.00437 (0.0384)	-0.0342 (0.0411)	0.0182 (0.0431)
Seniority	-0.000803 (0.00183)	-0.000873 (0.00182)	0.00257 (0.00245)	-0.0453*** (0.00686)	-0.0698*** (0.0113)
Majority Leader	-0.0226 (0.0254)	-0.0238 (0.0255)	-0.00639 (0.0447)	-0.0219 (0.0364)	0.0531 (0.0718)
Minority Leader	0.0249 (0.0323)	0.0252 (0.0317)	-0.0235 (0.0383)	0.0665 (0.0340)	0.00701 (0.0482)
Powerful Committee	-0.0140 (0.0177)	-0.0138 (0.0177)	-0.0353 (0.0210)	-0.0448 (0.0392)	-0.0639 (0.0455)
Up for Reelection	0.0201 (0.0153)	0.0199 (0.0153)	0.0235 (0.0227)	0.0249 (0.0170)	0.0302 (0.0252)
Freshman	-0.0329 (0.0281)	-0.0331 (0.0281)	-0.0165 (0.0355)	-0.0499 (0.0416)	-0.0183 (0.0552)
Female Member	-0.0485** (0.0154)	-0.0495** (0.0154)	-0.0788*** (0.0188)		
Rank	0.0366*** (0.00364)	0.0372*** (0.00367)	0.0548*** (0.00563)	0.0354*** (0.00569)	0.0592*** (0.00883)
(ln) Total Work Days	-0.00936 (0.00938)	-0.00944 (0.00942)	-0.0128 (0.0148)	-0.00911 (0.0100)	-0.0148 (0.0155)
District Staff	-0.0209 (0.0193)	-0.0208 (0.0193)	0.0123 (0.0314)	-0.0276 (0.0200)	0.000784 (0.0327)
Part Time	0.0761* (0.0360)	0.0760* (0.0360)	0.0540 (0.0450)	0.0586 (0.0372)	0.0451 (0.0472)
Hill Experience	-0.00223 (0.00351)	-0.00196 (0.00348)	0.00200 (0.00468)	-0.00214 (0.00352)	0.00251 (0.00511)
Graduate Degree			0.00994 (0.0216)		0.00977 (0.0238)
JD/PhD			0.00227 (0.0250)		0.0260 (0.0274)
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
N	12596	12596	6392	12004	6024
adj. R ²	0.013	0.013	0.028	0.018	0.030

Notes: The unit of observation is staffer × member's office × congress. Only personal office staff are included. Standard errors clustered at the member's office level are in parentheses. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A7: Gender Gap in Compensation - All Staff

Outcome = Total Salary (\$)	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	300.9 (0.72)	-1225.7* (-2.24)	-1225.3* (-2.24)	-1319.1* (-2.41)	-1319.1* (-2.41)
Female Staff × Democrat		2878.0*** (3.55)	2580.3** (2.89)	2640.8** (2.90)	2640.8** (2.90)
Female Staff × Democrat × Female Member			1233.8 (1.11)	1309.7 (1.07)	1309.7 (1.07)
Democrat	-1752.3** (-2.86)	-2599.9** (-3.28)	-2540.0** (-3.19)		
Female Member	5.123 (0.01)	106.2 (0.17)	-323.3 (-0.46)		
JD/PhD					4279.2*** (890.2)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	51813	51813	51813	51813	24865
adj. <i>R</i> ²	0.751	0.751	0.751	0.760	0.771
Panel B: Senate					
Female Staff	-2962.5*** (749.9)	-3479.7*** (1021.4)	-3483.6*** (1021.3)	-3433.8** (1032.5)	-4095.0* (1772.0)
Female Staff × Democrat		974.1 (1480.8)	543.9 (1645.1)	640.4 (1568.7)	-1520.8 (2402.7)
Female Staff × Democrat × Female Member			1639.9 (2307.5)	2109.4 (2255.2)	7305.6** (2450.4)
Democrat	180.3 (1272.6)	-333.3 (1353.0)	-238.7 (1349.8)		
Female Member	-2125.8 (1480.7)	-2130.5 (1483.3)	-2754.3 (1797.4)		
Hill Experience	4041.6*** (165.3)	4041.4*** (165.3)	4044.8*** (165.2)	4081.2*** (164.0)	3594.6*** (226.4)
JD/PhD					4279.2*** (890.2)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	46185	46185	46185	46185	18728
adj. <i>R</i> ²	0.663	0.663	0.663	0.671	0.695

Notes: The unit of observation is staffer × rank × member × Congress. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Only personal office staff are included. Standard errors clustered at the member-level are reported in the parentheses. (Source: Legistorm, 2001-2014)

Table A8: Gender Gap in Compensation - Full Results (House)

Outcome = Total Salary (\$)	(1)	(2)	(3)	(4)	(5)
Female Staff	-524.9 (317.6)	-1607.0*** (452.0)	-1602.7*** (451.9)	-1542.4*** (440.1)	-1091.2 (668.8)
Female Staff × Democrat		2138.7*** (627.9)	1689.9* (687.9)	1979.2** (694.8)	2647.2* (1041.5)
Female Staff × Democrat × Female Member			1724.4* (861.5)	493.2 (894.9)	-499.0 (1334.1)
<i>Member Characteristics</i>					
Democrat	-458.8 (503.3)	-1529.4* (607.4)	-1448.1* (608.1)		
Female Member	744.8 (538.1)	733.2 (537.7)	135.1 (622.6)		
Member Last Term	945.4* (393.1)	960.2* (393.1)	983.1* (392.6)	1758.1*** (440.7)	1272.2 (689.1)
Majority Party	-453.9 (393.0)	-461.9 (392.9)	-464.4 (392.3)	61.41 (349.0)	580.8 (571.7)
Committee Chair	107.0 (970.8)	102.7 (971.2)	89.25 (971.5)	-199.0 (762.3)	-968.1 (1189.4)
Subcommittee Chair	407.2 (521.1)	410.5 (521.8)	417.9 (520.1)	355.2 (459.5)	-228.0 (724.9)
Seniority	56.07 (87.14)	56.05 (87.51)	55.53 (87.50)	-293.2 (1176.7)	-899.3 (2509.3)
Majority Leader	-1335.3 (1031.7)	-1360.4 (1028.6)	-1334.3 (1014.9)	-2809.2** (865.8)	-3393.0** (1257.5)
Minority Leader	-668.9 (1056.2)	-671.1 (1053.5)	-698.9 (1046.3)	-1153.4 (819.4)	-623.6 (1353.5)
Powerful Committee	-328.9 (583.9)	-305.3 (584.8)	-295.8 (584.4)	52.53 (634.2)	-834.7 (1010.2)
<i>Staff Characteristics</i>					
Hill Experience	1486.6*** (99.32)	1488.5*** (99.18)	1489.7*** (99.18)	1528.4*** (101.0)	1538.4*** (136.1)
Total Days of Work	148.0*** (0.973)	148.0*** (0.973)	148.0*** (0.973)	148.0*** (0.974)	158.3*** (1.277)
Rank	-12437.3*** (213.7)	-12420.6*** (213.5)	-12421.3*** (213.5)	-12440.0*** (214.2)	-12869.6*** (283.0)
District Staff	4633.5*** (476.4)	4612.0*** (476.8)	4611.3*** (476.4)	4828.2*** (473.8)	4573.2*** (670.3)
Part Time	-16360.3*** (4181.3)	-16203.4*** (4176.1)	-16231.7*** (4176.1)	-17072.3*** (4266.7)	-13537.4* (5484.7)
JD/PhD					4279.2*** (890.2)
Graduate Degree					-449.2 (563.5)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	51813	51813	51813	51813	24865
adj. <i>R</i> ²	0.751	0.751	0.751	0.760	0.771

Notes: The unit of observation is staffer × rank × member × Congress. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Only personal office staff are included. Standard errors clustered at the member-level are reported in the parentheses. (Source: Legistorm, 2001-2014)

Table A9: Gender Gap in Compensation - Full Results (Senate)

Outcome = Total Salary (\$)	(1)	(2)	(3)	(4)	(5)
Female Staff	-2962.5*** (749.9)	-3479.7*** (1021.4)	-3483.6*** (1021.3)	-3433.8** (1032.5)	-4095.0* (1772.0)
Female Staff × Democrat		974.1 (1480.8)	543.9 (1645.1)	640.4 (1568.7)	-1520.8 (2402.7)
Female Staff × Democrat × Female Member			1639.9 (2307.5)	2109.4 (2255.2)	7305.6** (2450.4)
<i>Member Characteristics</i>					
Democrat	180.3 (1272.6)	-333.3 (1353.0)	-238.7 (1349.8)		
Female Member	-2125.8 (1480.7)	-2130.5 (1483.3)	-2754.3 (1797.4)		
Majority Party	-802.3 (1398.5)	-791.5 (1399.5)	-778.9 (1397.9)	-231.4 (922.6)	3477.6* (1468.8)
Committee Chair	508.4 (1157.4)	511.9 (1156.6)	521.0 (1148.5)	721.0 (869.8)	-1564.1 (1479.6)
Subcommittee Chair	621.5 (1339.9)	613.3 (1340.3)	588.4 (1333.8)	-287.7 (785.0)	-1470.8 (1129.2)
Seniority	445.0** (138.3)	444.6** (138.2)	444.6** (138.6)	-2928.1*** (245.6)	-3088.5*** (413.1)
Majority Leader	-4008.5* (1840.8)	-4021.4* (1841.4)	-3989.2* (1860.2)	-3484.9** (1284.9)	-7555.1** (2278.5)
Minority Leader	-1492.1 (1786.8)	-1490.6 (1784.3)	-1505.5 (1780.3)	-2326.2 (1204.1)	-4426.2* (2021.6)
Powerful Committee	1015.5 (1167.7)	1017.5 (1168.4)	1058.1 (1158.4)	513.2 (929.9)	-621.5 (1218.7)
Up for Reelection	410.9 (420.5)	414.0 (420.5)	418.8 (418.8)	200.0 (384.3)	1.057 (584.2)
Freshman	7873.1*** (1093.6)	7865.0*** (1093.1)	7872.4*** (1091.1)	6437.0*** (787.7)	5042.3*** (1085.7)
<i>Staff Characteristics</i>					
Hill Experience	4041.6*** (165.3)	4041.4*** (165.3)	4044.8*** (165.2)	4081.2*** (164.0)	3594.6*** (226.4)
Total Days of Work	195.3*** (1.957)	195.3*** (1.960)	195.3*** (1.958)	194.4*** (1.902)	214.4*** (2.356)
Rank	-16147.2*** (429.3)	-16140.9*** (429.1)	-16135.5*** (428.6)	-16327.8*** (425.4)	-17886.7*** (530.9)
State Office Staff	-10124.8*** (1287.3)	-10124.9*** (1288.0)	-10152.1*** (1281.0)	-9664.2*** (1265.2)	-10059.0*** (1657.6)
Part Time	-1528.6 (1439.0)	-1531.3 (1438.4)	-1539.8 (1439.8)	-1462.3 (1442.3)	-2289.7 (1690.7)
JD/PhD					4279.2*** (890.2)
Graduate Degree					1770.2 (1105.7)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	46185	46185	46185	46185	18728
adj. <i>R</i> ²	0.663	0.663	0.663	0.671	0.695

Notes: The unit of observation is staffer × rank × member × Congress. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Only personal office staff are included. Standard errors clustered at the member-level are reported in the parentheses. (Source: Legistorm, 2001-2014)

C Appendix: Discussion of Coding and Results with Alternative Coding of Staff Rank

As we discuss in the manuscript, we coded staff titles based on (1) position within the staff hierarchy (or chain of command), (2) position qualifications, and (3) the substance of the staff position's responsibilities (e.g., administrative, policy, press). We relied on several Capitol Hill and academic sources and Congressional Research Service reports which offer descriptions of chain of command, qualifications, and responsibilities for each position. Each of these three criteria produce generally consistent rankings. For example, the positions that are responsible for administrative and clerical duties are also generally the lowest ranking positions in the chain of command and also require the lowest level of qualifications (are entry-level). The "policy and press support" positions (Deputy Press Secretary, Legislative Correspondent) are lower in the chain of command than "policy and press" positions (Legislative Assistant, Press Secretary) but often require some prior Hill experience (usually as a Staff Assistant). In cases which listed multiple (simultaneous) positions, we coded the rank of the staffer based on the highest ranking position listed.

However, there are some positions for which ranking based on the three criteria (chain of command, qualifications, responsibilities) may be more challenging. For example, as we note in footnote 17 (page 16) of the manuscript, Chiefs of Staff and Deputy Chiefs of Staff often manage administrative tasks although they are considered to be at the top of the chain of command and require the most qualifications. However, they are also responsible for the policy agenda and supervising the legislative staff and so are included within the category of "Executive" above policy and press positions.¹ Of course, the distinction between district/state and DC staff also presents a challenge, however we include an indicator variable in our analyses to account for it.

Additionally, our coding sources generally combine Communication Directors and Press Secretaries (e.g., referring to the positions as "Press Secretary/Communication Director" and using them interchangeably) rather than indicating different positions in the hierarchy.² However, there can be chamber differences and that the positions are often separate in the Senate with Communications Director ranking higher than Press Secretary (Petersen, Reynolds and Wilhelm, 2010). Our robustness checks using alternative rankings described below and presented in the following pages should account for this (particularly the ranking used in Appendix Tables A12 and A13).

Other chamber differences in how the same position is treated may be evident in our results. For example, in column 4 of Table 4, Panel B (p. 26), we observe a positive and significant coefficient for Rank 7 in the Senate, suggesting that women actually make significantly more than men in the Rank 7 positions. This result seems inconsistent with our theory and with Rank 7 in the House (for which the results are not significant and in directions are not consistent across specifications). One possible explanation for this result is that Rank 7 includes the position of Executive Assistant, which is an administrative/clerical position that historically has been overwhelmingly occupied by women and can be highly paid because it is often a position held for a staffer's entire

¹"Senate Staff Employment Study Salary, Tenure, and Demographic Data: 1991-2001." Congressional Management Foundation (http://www.congressfoundation.org/storage/documents/CMF_Pubs/cmfsenatesalarystudy1991-2001.pdf).

²See: Petersen and Chausow (2016); "Job Descriptions: House Office Sample." Congressional Management Foundation (<http://www.congressfoundation.org/component/content/article/85/136-job-descriptions-house-office-sample>)

career on Capitol Hill— Executive Assistants may not have prior experience or qualifications (it can be an entry-level position), but they often remain in the position for the entirety of their careers on Capitol Hill without expected of promotion. This could explain why women in Rank 7 are paid significantly more (in the Senate) and why the results are mixed for the House, yet women in Rank 7 are still promoted significantly less in both chambers (Panel A of Table 4). However, the characterization of Executive Assistants offered above is most accurate of the Senate. In the House, the position of Executive Assistant can be used interchangeably with the position of Staff Assistant, although the latter still carries some connotation that the staffer expects to be promoted to policy or press staff. Also, the longer terms and careers of senators may mean that an individual Executive Assistant may stick with the senator longer, thus accumulating a higher salary. We continue to code this position at Rank 7 because, while there may be some uncertainty and variation in where the position falls within the staff hierarchy, (1) it is either an entry-level position or obtained after working as a Staff Assistant (an entry-level position that is decidedly at the bottom of the staff hierarchy) and with the lowest levels of position qualifications and (2) it is an administrative position with no policymaking or press responsibilities (unless combined with other positions, in which case it would have been coded based on the higher ranking position) and without policy or press oversight.³

In this section, we present the results when we use different coding rules for staff rankings. We have created two alternative ranking schemes. Our results are robust when using the alternative rankings. Tables A10 and A11 present the results when using the following coding scheme (“**2nd Ranking Scheme**”). We modified the coding scheme presented in the main text by combining press positions (Communications Director and Press Secretary) and Legislative Assistants into the same rank (Rank 5). Thus, the ranking from highest to lowest rank proceeds as follows: 1 = Chief of Staff, 2 = Deputy Chief of Staff, 3 = State/District Director, 4 = Legislative Director, 5 = Communications Director, Press Secretary, Legislative Assistant, 6 = Deputy Press Secretary, Legislative Correspondent, Specials Director, Deputy State/District Director, 7 = Executive Assistant, Office Manager, Caseworker, Staff Assistant.

Tables A12 and A13 present the results when using the following coding scheme (“**3rd Ranking Scheme**”). We modify the coding scheme by separating out Communication Director (Rank 4) and Press Secretary (Rank 5). We combine Communication Director with Legislative Director at Rank 4 and include Press Secretary with Legislative Assistant at Rank 5. The ranking from highest to lowest rank proceeds as follows: 1 = Chief of Staff, 2 = Deputy Chief of Staff, 3 = State/District Director, 4 = Legislative Director, Communications Director, 5= Press Secretary, Legislative Assistant, 6 = Deputy Press Secretary, Legislative Correspondent, Specials Director, Deputy State/District Director, 7 = Executive Assistant, Office Manager, Caseworker, Staff Assistant.

³http://www.congressfoundation.org/storage/documents/CMF_Pubs/cmfsenatesalarystudy2001.pdf

Table A10: Gender Gap in Promotion - Using 2nd Ranking Scheme

	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	-0.0831*** (0.00754)	-0.103*** (0.0110)	-0.0992*** (0.0155)	-0.0723** (0.0256)	-0.0609 (0.0367)
Female Staff × Democrat		0.0400** (0.0147)	0.0200 (0.0216)		
Female Staff × Female Peer Share				-0.00814 (0.0434)	-0.0475 (0.0631)
Female Staff × Female Boss Share				-0.0574 (0.0304)	-0.0824 (0.0427)
Member Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	29104	29104	15628	26007	13839
adj. <i>R</i> ²	0.028	0.028	0.054	0.025	0.044
Panel B: Senate					
Female Staff	-0.0428*** (0.00911)	-0.0695*** (0.0122)	-0.0733*** (0.0192)	0.000321 (0.0329)	-0.0424 (0.0493)
Female Staff × Democrat		0.0491** (0.0174)	0.0402 (0.0251)		
Female Staff × Female Peer Share				-0.100 (0.0634)	-0.0226 (0.0959)
Female Staff × Female Boss Share				-0.000914 (0.0384)	-0.00289 (0.0486)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	15007	15007	7881	14110	7339
adj. <i>R</i> ²	0.017	0.017	0.035	0.020	0.036

Notes: The unit of observation is staffer × member's office × congress. Only personal office staff are included. Standard errors clustered at the member's office level are in parentheses. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A11: Gender Gap in Compensation - Using Rank 2

Outcome = Total Salary (\$)	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	-398.8 (320.0)	-1387.8** (453.0)	-1384.1** (452.9)	-1299.5** (443.5)	-702.4 (684.8)
Female Staff × Democrat		1953.6** (632.2)	1546.3* (692.7)	1802.0* (702.5)	2350.2* (1071.2)
Female Staff × Democrat × Female Member			1561.6 (872.7)	507.0 (905.0)	-400.4 (1376.7)
Democrat	-478.6 (507.2)	-1456.8* (613.9)	-1382.9* (614.6)		
Female Member	696.4 (539.8)	685.2 (539.7)	143.1 (624.7)		
Hill Experience	1531.0*** (100.4)	1533.0*** (100.3)	1534.0*** (100.3)	1585.1*** (101.9)	1607.5*** (137.8)
JD/PhD					3281.1*** (902.5)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	51693	51693	51693	51693	24781
adj. <i>R</i> ²	0.747	0.747	0.747	0.756	0.766
Panel B: Senate					
Female Staff	-2766.8*** (758.8)	-3239.0** (1021.6)	-3242.8** (1021.5)	-3186.5** (1031.3)	-3860.3* (1785.6)
Female Staff × Democrat		888.8 (1485.6)	497.4 (1648.0)	579.9 (1574.5)	-1608.4 (2433.8)
Female Staff × Democrat × Female Member			1492.7 (2345.3)	1941.2 (2310.3)	7116.1** (2522.3)
Democrat	187.5 (1264.3)	-281.3 (1349.4)	-195.1 (1346.8)		
Female Member	-1989.1 (1448.6)	-1993.4 (1451.0)	-2561.4 (1791.9)		
Hill Experience	4147.1*** (165.6)	4146.9*** (165.6)	4150.0*** (165.5)	4194.3*** (164.5)	3728.5*** (227.8)
JD/PhD					6664.3*** (890.2)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	46156	46156	46156	46156	18711
adj. <i>R</i> ²	0.658	0.658	0.658	0.665	0.689

Notes: The unit of observation is staffer × rank × member × Congress. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Only personal office staff are included. Standard errors clustered at the member-level are reported in the parentheses. (Source: Legistorm, 2001-2014)

Table A12: Gender Gap in Promotion - Using 3rd Ranking Scheme

	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	-0.0836*** (0.00749)	-0.102*** (0.0107)	-0.0918*** (0.0151)	-0.0515 (0.0266)	-0.0310 (0.0377)
Female Staff × Democrat		0.0360* (0.0145)	0.00975 (0.0213)		
Female Staff × Female Peer Share				-0.0327 (0.0440)	-0.0857 (0.0619)
Female Staff × Female Boss Share				-0.0766* (0.0302)	-0.0984* (0.0414)
Member Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	29289	29289	15754	26430	14097
adj. <i>R</i> ²	0.029	0.029	0.055	0.027	0.044
Panel B: Senate					
Female Staff	-0.0429*** (0.00917)	-0.0677*** (0.0125)	-0.0698*** (0.0193)	0.0127 (0.0351)	-0.00731 (0.0524)
Female Staff × Democrat		0.0457** (0.0175)	0.0350 (0.0250)		
Female Staff × Female Peer Share				-0.132* (0.0634)	-0.100 (0.0970)
Female Staff × Female Boss Share				0.00893 (0.0418)	0.0116 (0.0525)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Staff Education			✓		✓
Member FE				✓	✓
<i>N</i>	15074	15074	7929	14266	7434
adj. <i>R</i> ²	0.017	0.017	0.035	0.020	0.036

Notes: The unit of observation is staffer × member's office × congress. Only personal office staff are included. Standard errors clustered at the member's office level are in parentheses. (Source: Legistorm, 2001-2014) * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A13: Gender Gap in Compensation - Using 3rd Ranking Scheme

Outcome = Total Salary (\$)	(1)	(2)	(3)	(4)	(5)
Panel A: House					
Female Staff	-499.9 (322.0)	-1542.6*** (462.1)	-1538.9*** (462.0)	-1463.6** (453.4)	-987.8 (692.3)
Female Staff × Democrat		2060.7** (636.6)	1650.4* (695.6)	1864.4** (706.4)	2396.1* (1065.4)
Female Staff × Democrat × Female Member			1574.8 (862.0)	595.9 (898.4)	-213.5 (1362.0)
Democrat	-580.9 (503.2)	-1612.9** (612.4)	-1538.4* (613.1)		
Female Member	774.9 (535.2)	763.0 (534.9)	216.0 (619.9)		
Hill Experience	1558.6*** (99.76)	1560.6*** (99.64)	1561.6*** (99.63)	1611.6*** (101.4)	1662.3*** (136.6)
JD/PhD					4011.0*** (898.1)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	51878	51878	51878	51878	24907
adj. <i>R</i> ²	0.745	0.745	0.745	0.754	0.764
Panel B: Senate					
Female Staff	-2588.9*** (752.7)	-3016.7** (1026.6)	-3020.6** (1026.5)	-2970.1** (1035.2)	-3742.1* (1782.1)
Female Staff × Democrat		805.1 (1484.5)	416.3 (1648.8)	497.4 (1571.5)	-1670.0 (2421.3)
Female Staff × Democrat × Female Member			1481.8 (2304.9)	1971.6 (2266.9)	7172.4** (2495.9)
Democrat	64.9 (1256.6)	-259.4 (1342.2)	-173.9 (1339.4)		
Female Member	-2055.2 (1440.4)	-2059.2 (1442.7)	-2622.8 (1767.8)		
Hill Experience	4060.1*** (165.1)	4059.9*** (165.1)	4063.0*** (165.0)	4100.1*** (163.6)	3573.9*** (226.1)
JD/PhD					7223.1*** (1927.1)
Controls	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓
Member FE				✓	✓
<i>N</i>	46262	46262	46262	46262	18781
adj. <i>R</i> ²	0.661	0.661	0.661	0.668	0.692

Notes: The unit of observation is staffer × rank × member × Congress. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Only personal office staff are included. Standard errors clustered at the member-level are reported in the parentheses. (Source: Legistorm, 2001-2014)

D Appendix: Position Advertisement Example

Figure A1: Example of Position Advertisement: Press Secretary for Senator Bernie Sanders

224901

PRESS SECRETARY -

Sen. Bernie Sanders seeks an experienced, motivated and detail-oriented Press Secretary. The ideal candidate will have: excellent writing and editing skills, a strong familiarity and demonstrated past success with social media strategies; on-the-record experience; a demonstrated track record of multi-tasking, ability to fulfill an on-call role during weekends. Duties include, but are not limited to: fielding press calls, drafting press releases, coordinating press events, writing copy for office website, managing and drafting content for social media accounts, managing short and long-term communications projects and contributing to a fast-paced communications team. Senate experience preferred. Vermont ties a plus. **Please e-mail a cover letter and resume to senate_employment@saa.senate.gov indicating job referral number in the subject line.**