Navigating the brogrammers and the boys' club: Women's representation and experiences in political technology

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Abstract
This article offers the first systematic study of the hiring patterns and career experiences of women working on U.S. presidential campaigns in the new field of political technology. We paired the quantitative analysis of a dataset of 995 staffers active in technology, digital media, data, and analytics across four presidential election cycles (2004–2016) with data from 45 in-depth interviews with women active on 12 presidential campaigns. We find that women are systematically under-represented, they do not ascend to leadership positions at the same rates as men, and they do not have the same entrepreneurial opportunities. When women do get hired, many find it challenging to be heard, are judged according to different standards than men, and have few ways of holding people accountable for inappropriate behavior or arbitrary exercises of power. The findings likely have implications for other fields that have been reshaped by technology, from journalism to entertainment media.

In May 2018, *Huffington Post* reporter Molly Redden (2018) published an exposé of the sexual transgressions of prominent Democratic Party technology staffer and political consultant Clay Johnson. As Redden showed through dozens of interviews—including those with women accusing him of sexual assault—despite repeated accusations against

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him on campaigns (including the highly lauded Howard Dean 2004 presidential campaign) and in progressive workplaces such as leading digital consultancy Blue State Digital, Johnson faced few consequences for his actions and continued to find work opportunities in the field. That Johnson was a particularly important member of the Dean campaign is ironic given that in the press, political consulting (Trippi, 2004), and communication literature, Dean's presidential run has been held up as a symbol of a new, more participatory form of technology-enabled politics (e.g., Chadwick, 2007; Jenkins, 2006). Meanwhile, as a luminary in Democratic political technology, Johnson has been cited in academic books and articles for his role in Dean's campaign and Internet politics more broadly (e.g., Stromer-Galley and Baker, 2006)—including in the first author's account (Kreiss, 2012) of the history of Democratic political technology from Dean to Barack Obama.

Despite these academic accounts, none detail in any way the subject of Redden's investigative piece: the experiences of women on the Dean campaign or on campaigns more generally. Even more, none of the works in a now-massive literature on the Internet and campaigning (e.g., Kreiss, 2012, 2016; Bimber, 2003; Chadwick, 2017; Stromer-Galley, 2014) have questioned the dynamics of gender at the intersection of two historically male-dominated fields: politics and technology. While the literature on the changing nature of political campaigns has been silent about gender in the field of political technology, scholars in other fields have analyzed how gender impacts organizations and work in other domains, including technology (Abbate, 2012; Hicks, 2017).

This study takes inspiration from works such as these to provide the first systematic analysis of the hiring and experiences of women working in political technology on U.S. presidential campaigns. We analyze a dataset on 995 staffers active in technology, digital media, data, and analytics from 2004 to 2016 to chart gendered differences in hiring patterns (by campaign, party, and electoral cycle), leadership positions, and rates of entrepreneurship. To capture the firsthand experiences of women in the field, we couple this quantitative analysis with data from 45 in-depth interviews with women active on 12 presidential campaigns from 2004 to 2016. Taken together, this article demonstrates that women are systematically under-represented in the field of political technology, they do not ascend to leadership positions at the same rates as men, and they do not have the same entrepreneurial opportunities. When women do get hired by campaigns, many state that they find it challenging to make their voices heard, are judged according to different standards as men, and have little means of accountability for sexual harassment or assault.

This matters not just in terms of equity but also because some studies have shown that the people practicing politics shape the strategy and communications content of campaigns, with long-term consequences for the messages in the public sphere (Burton et al., 2015; Grossmann, 2009). For example, in a study examining women candidates' campaigns, Dittmar (2015) shows how the decisions that staffers and consultants make help reproduce gender bias in the electorate. Therefore, not only is the analysis of political technology important in terms of who is represented and included, but understanding the production of political communication, and ultimately the messages the electorate sees, requires analysis of the people responsible for it. While we do not have the space here to examine the output of these campaigns, this study is the necessary first step in analyzing

the gendered composition of campaign teams in the domains of technology, digital, data, and analytics. Furthermore, this study likely reveals processes and patterns that are also taking shape in other fields being reshaped by technology, such as journalism and entertainment media.

The vanished women in the political technology literature

Nearly 20 years ago, science and technology scholar Diana Forsythe (2001) chronicled the tendency of women's labor to "vanish" in technology and engineering workplaces. The same can be said about gender and the political communication literature in the context of the study of the fields, organizations, practitioners, and technologies that produce much of what voters see in the course of an election.

Over the past two decades, there has been an explosion of research into political organizations, and political campaigns in particular, against the backdrop of technological and media change (Bennett and Segerberg, 2012; Bimber, 2003; Bimber et al., 2012; Karpf, 2012). At the same time, rich bodies of literature developed specifically around the changing nature of the campaign and party organizations contesting electoral politics and the types of digital communications they were producing (Baldwin-Philippi, 2015; Chadwick, 2017; Stromer-Galley, 2014).

However, across this vast body of literature, no study that we are aware of has taken up gender as an explicit object of analysis in the context of the field of political technology or the workings of contemporary campaigns or parties. While there are a large number of studies on the under-representation of women in politics and gendered constructions and understandings in political life (for a review and analysis see Conroy, 2016), to date, there has not been systematic research attention to the representation of women among campaign staffers or their experiences in the context of the internal workings of campaigns and other political organizations, including in the comparatively new domain of political technology. To take one example of the vanished women in the research on political technology noted above, Kreiss's (2012, 2016) two books spanning U.S. election cycles from 2000 to 2014 analyzed and chronicled the formation of the field of political technology during this period, including the hiring patterns of staffers, the founding of new specialized consultancies providing this expertise to campaigns and parties, the influx of commercial tech workers into electoral politics, and the founding of campaign organizational divisions dedicated to technology, digital media, data, and analytics. Although these books claimed to analyze the new workplaces at the intersection of technology and politics, there was no discussion of gender in either of them (or race and ethnicity).

While there is a lack of studies on gender in political technology, based on scholarship in other domains, we expect to find some broad patterns in terms of the representation and inclusion of women in political technology. Despite the invisibility of sex and gender in research on political campaigns, the under-representation of women as political candidates is well-documented and has been found to extend to all levels of government: Women hold only 25% of the seats in state legislatures, and only 20% of the mayors in the 100 largest U.S. cities are women (Center for American Women Politics, 2017). White (2018) estimates that at the current rate of change, women will not achieve gender parity in the U.S. Senate until 2157. In addition, these gender discrepancies extend past

the realm of politics to those covering it: Grabe et al.'s (2011) analysis of gender differences between network news political correspondents covering four U.S. presidential elections found that men outnumbered women reporters at a ratio of 4.5:1.

A number of scholars have also examined the representation and experiences of women in Silicon Valley media production (Marwick, 2013); the engineering and computing workforces (Buse et al., 2017); the cultural industries (for an overview, see Mayer et al., 2009); and the information technology (IT) and science, technology, engineering, and mathematics (STEM) sectors (Dobson, 2016; Gershon, 2017; McKibben, 2006; McLaughlin, 2007, 2009; Neff, 2012; Rosser, 2005; Seron et al., 2016; Shade, 2014; Williams and Dempsey, 2014). Abbate (2012) draws on documentary evidence and 52 interviews in a historical study of "how gender has influenced the culture and structures of opportunity in the computing professions over time" (p. 2). Abbate chronicles the historical shift of programming from women's to men's work in the 1960s and 1970s and analyzes the factors that led to fewer women being represented in IT professions today, including assumptions about technical skill that shapes both the supply and demand for women's labor in computing, different expectations for men's and women's careers, stereotypes relating to computers and who they are for, and the lack of work–life balance (Abbate, 2012: 2–3). Duffy and Schwartz (2017) reveal the degree to which things like social media production in commercial contexts are undervalued as "pink collar" employment.

Scholars have also found that women in STEM report experiencing broader issues of social isolation, difficulty gaining respect, and gender stereotyping (Buse et al., 2017; Seron et al., 2016; Williams and Dempsey, 2014). Eagly and Carli (2007) suggest that the metaphor of the "glass ceiling" be replaced with that of a "complex journey" (p. 10) through a labyrinth built by gendered roles and norms, cultural institutions, and workplace practices. We expect women to relate similar issues in the context of careers in political technology, especially regarding how differential assumptions about technical skill and expectations for careers and work–life balance lead to the under-representation of women in the field and in leadership roles.

Meanwhile, Forsythe (2001) finds that women are "anomalous" in artificial intelligence (AI) and medical informatics, and the lab is culturally constructed as a "male territory"—marked by the "othering" of women, requiring women to act as "one of the boys" (by being "bright, tough, and assertive" and being able "to withstand teasing, testing, and sometimes outright harassment"), and the "bracketing" out of women as sources of knowledge, as sources of labor that matter to labs, and in terms of the status afforded to certain types of work and the people who perform it (p. 169). Forsythe notes the degree to which senior men are often the only mentors available, the ways that they are necessary for career success, and the importance of networks in the context of careers in AI and medical informatics—and as a result, there are monumental career risks women face if they call out unfair or sexist treatment. Given these dynamics, Forsythe argues forcefully that "pipelines" into male-dominated careers are not just at issue; it is the workplaces women encounter once they get there that also drive women from the field or lead them to discourage other women from entering it. This aligns with Kanter's (1977, 2008) identification of the experiences common among "token" women in male-dominated work environments: women's high visibility subjects them to greater pressure

to perform; they are isolated from informal social and professional networks through "boundary heightening," isolating women from informal social and professional networks; and they are forced into role and gender stereotypes through "role encapsulation" (Kanter, 2008; Roth, 2004).

We anticipate that through an analysis of the hiring patterns and experiences of women in political technology, we will find similar dynamics, including the under-representation of women in the field and in leadership roles, gendered assumptions relating to competencies and skills, a lack of work–life balance, the cultural construction of political technology workplaces as male-dominated, and the erasing of women's labor. We also expect, given work on political networks (Nyhan and Montgomery, 2015), that mentorship and relationships play particularly outsized roles in structuring the trajectory of careers, which in turn shapes women's ability to hold people accountable for unprofessional behavior. At the same time, women likely face unique challenges in the field of political technology given that it lies at the intersection of two male-dominated fields (Chang, 2018; Enloe, 2008), it is a historically recent domain of campaign practice, and there are structural constraints on campaigns as organizations. Given that the field of political technology only dates from the 2004 electoral cycle (Kreiss, 2012, 2016), networks, entrepreneurship, and relationships with external fields such as the technology industry are likely more important for careers than in other fields. In addition, campaigns are quickly assembled, temporary enterprises that suffer from resource constraints (Kreiss, 2016), which means that deliberate hiring for diversity among staffers and leadership and formal mechanisms of accountability are likely less present on campaigns than in other industries or more enduring political organizations.

Methods

This article is adapted and expanded from a self-published public report released in May 2018 at an event for practitioners at GoogleDC. The dataset for the quantitative analysis of hiring patterns, leadership positions, and entrepreneurship of women and men in political technology is compiled from the nonprofit, non-partisan "Democracy in Action" website, which organizes public data on campaign staffing. The dataset of staffers who either worked in campaign divisions dedicated to technology, digital, data, or analytics or who had these words in their titles also contains staffers' employment biographies drawn from publicly available websites. Previous analyses of this dataset ($N=629$) focused on innovation in the context of campaigning and was limited to data through the 2012 cycle (for a detailed description of this dataset, see Kreiss, 2016; Kreiss and Jasinski, 2016; Kreiss and Saffer, 2017). For this study, we updated the dataset through the 2016 cycle ($N=995$) and explicitly analyzed hiring by gender for the first time. To supplement other sources, given that Republican campaigns often hire through consultancies (see Kreiss, 2016), we proactively reached out to Republican firms that handled various technology, digital, data, and analytics operations for 2016 campaigns, resulting in the addition of 64 staffers.

Coding began with the recording of fundamental information such as the gender and political party of employment per staffer. Coders then identified staffers' employment

histories specific to presidential campaigns, including the election cycles and candidates for which they worked as well as the total number of campaigns worked. To analyze leadership positions by gender, staffers were coded for the presence of director-level or higher positions on presidential campaigns; when coding this variable, coders were instructed to be as inclusive as possible. To analyze rates of entrepreneurship, the research team coded for staffers who founded new organizations after presidential campaigns. Similar to Kreiss (2016), in the interest of being as inclusive as possible, we coded organizational founders as staffers who indicated their titles on LinkedIn or other publicly available sources as "founder," "founding partner," or "principal" at the time of founding. Eight undergraduate coders who were part of the research team were comprehensively trained in independently coding all 995 units in the dataset. After coders completed training, a subgroup of the main study data—100 units or 10% of the dataset—was selected for reliability testing using sampling theory and guidance from Lacy et al. (2015). Using Krippendorff's alpha, intercoder reliability was assessed, with all variables reaching acceptable levels of alpha: gender (.83), party (1.0), director level (.74), number of campaigns (.92), 2000 campaigns (.98), 2004 campaigns (1.0), 2008 campaigns (1.0), 2012 campaigns (.90), and 2016 campaigns (1.0). Average pairwise percent agreement ranged from 88% to 100% for all variables, with six variables reaching at least 98% simple agreement.

This dataset provided the basis for qualitative, in-depth interviews conducted by the first author and a trained team of 12 undergraduate researchers. We followed Abbate (2012) in using "women's experiences as a lens to focus attention on unexamined mechanisms of gender discrimination" while recognizing that gender categories of masculinity and femininity are socially constructed and not determined by biological sex alone (p. 5). This means not equating "studying gender with studying women, as if men and masculine culture were gender neutral" (Abbate, 2012). Indeed, as we show below, masculine traits, such as assertiveness and aggressiveness in the workplace, can be performed by women (yet, women are often sanctioned for this behavior, while men are not). We follow Abbate (2012) in proceeding from the narratives of self-identified women because "by their very lack of fit with expected norms" they "can bring into sharp relief the gendered nature of science and technology."

The research team was able to identify current contact information for approximately 172 women in the dataset; among those, we conducted interviews with 45 women who worked in U.S. presidential politics between the years of 2004–2016 in the areas of technology, digital, data, or analytics for 12 presidential campaigns: George W. Bush 2004 (R), Jeb Bush 2016 (R), Chris Christie 2016 (R), Hillary Clinton 2008 and 2016 (D), John Edwards 2004 and 2008 (D), Rudy Giuliani 2008 (R), John McCain 2008 (R), Barack Obama 2008 and 2012 (D), and Mitt Romney 2012 (R). The research team developed an interview protocol asking general questions about women's experiences working on campaigns; their reception and treatment on campaigns; the attitudes and behaviors of colleagues; experiences with gender bias and sexual harassment or more broadly times when workplace conditions made them uncomfortable; and their careers in the field in terms of opportunities for mentorship, advancement, and entrepreneurship. While many of the women we interviewed had experiences on a number of different campaigns, to bound the scope of this study at the highest level of US politics, we only report

Table 1. Frequencies of political technology hiring by gender on presidential campaigns, 2004–2016.

	2004	2008	2012	2016
Men	62	150	322	232
	(79.5%)	(75.0%)	(65.7%)	(62.5%)
Women	15	46	167	137
	(19.2%)	(23.0%)	(34.1%)	(36.9%)
Other/Don't	1	4	1	2
know	(1.3%)	(2.0%)	(0.2%)	(0.5%)
Total	87	199	491	371

data here related to presidential campaigns. Interviews, on average, lasted an hour, with a few taking significantly longer.

Given the potentially sensitive nature of these interviews and the likelihood that participants would address themes that affected future employment, all participants were granted confidentiality and information was reported only using general descriptors of roles on presidential campaigns. We made attribution reporting decisions in terms of campaigns these women worked on and their roles within them, with attention to whether information would breach their confidentiality. In a number of cases, campaigns had so few women, or so few women in particular roles, that we opted to provide only party and electoral cycle data.

Results

The under-representation of women in political technology

Overall, technology, digital, data, and analytics staffers hired by presidential campaigns in this dataset increased by 326% between 2004 and 2016 (see Table 1), with a clear gender gap present in campaign hiring: Only 32% of all 2004–2016 political technology staffers were women, although this percentage steadily increased from 19% in 2004% to 37% in 2016 (see Table 1). Men have overwhelmingly dominated staffing on both sides of the aisle, although slightly less so among Democratic (65%) than Republican candidates (76%).

Analyzing these data by election year paints a more nuanced picture of hiring patterns over time as well as differences between parties and campaigns. Amid the rise of political technology divisions in 2004 and 2008, similarities in gendered hiring within parties are clear: more than 85% of the Republican nominees' technology staffers in 2004 (George W. Bush) and 2008 (John McCain) were men, while on the Democratic side, 2004 and 2008 nominees John Kerry and Barack Obama both hired approximately one woman for every three men (see Table 2). Notably, the 2008 campaign for Democratic runner-up Hillary Clinton nearly reached gender equity, with 40% of technology staffers being women. In 2012, nearly one-third of technology staffers were women on the Obama and Romney campaigns (34% and 37%, respectively). But in 2016, there were clear differences even among campaigns within the same party: Nearly 38% of Jeb Bush's political

Table 2. Political technology hiring by presidential campaign and gender, 2004–2016.

	Men	Women
2004		
George W. Bush (R)	9	1
John Kerry (D)	29	9
Howard Dean (D)	10	3
Wesley Clark (D)	15	3
2008		
Barack Obama (D)	94	35
John McCain (R)	15	2
Hillary Clinton (D)	5	4
Mitt Romney (R)	5	1
John Edwards (R)	5	1
Chris Dodd (D)	6	0
2012		
Barack Obama (D)	240	67
Mitt Romney (R)	67	39
Newt Gingrich (R)	7	0
2016		
Hillary Clinton (D)	125	111
Ted Cruz (R)	42	4
Bernie Sanders (D)	28	7
Jeb Bush (R)	13	8
Scott Walker (R)	6	2
Donald Trump (R)	6	0

Candidates with five or fewer staffers in dataset were excluded from this table.

technology staffers were women, while the Donald Trump staffers in this dataset included no women (Table 2). Bernie Sanders' campaign was made up of 20% women—in stark contrast with Hillary Clinton's campaign made up of 47% women, largely because of intentional hiring practices designed to achieve staff diversity (Table 2).

Our interview data reveal that the barriers to the equal representation of women in the field of political technology are multifaceted and systemic—even amid efforts on campaigns such as Clinton's to explicitly identify and recruit diverse job candidates. In total, 17 women cited that campaigns often lack the time and resources necessary for extensive hiring processes, including formal recruiting and lengthy job searches. As a result, campaigns instead often engage in the rushed hiring of those who immediately appear on their radar—which often leads to an over-reliance on networks made up of predominantly men to supply campaign staffers. These networks also come into play during the early phases of a campaign. Before campaigns officially launch, the pipeline of hires mostly comes through networks of trusted former colleagues to ensure candidacies remain secret. These networks do the work of vetting potential staffers, in essence enabling campaigns to hire known quantities—all of which is made more important under time constraints, which make extensive rounds of interviews hard. Participants noted

these practices reward well-established networks, which in the political technology space are historically made up of men. Even more, women cited that potential staffers from technology companies are also predominantly men, reflecting the male-dominated employment patterns of the industry (Chang, 2018). While we lack quantitative data on the racial and ethnic makeup of political tech staffers, our participants argued that these hiring practices particularly affect women of color.

As a junior Clinton digital staffer summarized, echoing 30 other women, even amid efforts to explicitly identify and recruit diverse candidates, a number of factors work against achieving greater representation of women and people of color on campaigns:

> Because you're against a ticking clock and there's a limited number of months or weeks that these people are working, there is a huge emphasis on hiring as quickly as possible. And that really prohibits you from doing a thorough and balanced search. It definitely favors the people that found their way to you, which all the things that help you do that, all traits that men have more than women. You have to be really confident. You have to be unafraid to walk in and say that you're qualified to do any job. There's some shameless self-promoting in that, that is definitely part of networking in politics and definitely often how people get jobs. So women are just disadvantaged in doing that …

As this woman points to, our participants argued that there are a number of cultural factors that shape women's presentation styles during interviews, and ultimately their ability to be hired, even if they manage to navigate relationship-based networks to get their foot in the door. Women witnessed how unwavering confidence and self-promotion are rewarded in campaign interviews—presentation styles that seldom come as easily for women as for men given socially defined gender roles and expectations (Williams, 2015). Even more, a number of women reported that there were often negative, gendered assumptions about the capabilities of women tech staffers among those responsible for hiring (which echoes studies from the STEM fields, Dasgupta and Stout, 2014). Indeed, 12 participants described work cultures on campaigns where men were inherently regarded as more competent and talented than women. As one woman who worked as an engineer for Hillary Clinton's 2016 presidential campaign explained,

> There's been a ton of times where my experience has been marginalized or somebody assumes I'm not capable of doing something because I'm a woman. Oftentimes people will put, like I mentioned, tasks that are more stereotypically female on me, part of it is they think they're not good enough and they just sort of think it's my role to do, which ends up creating additional work for me, because I'm asked to do all the work the man is doing as well as additional things that somehow become my job, even if they really shouldn't be.

Surprisingly, the women who came to politics after careers spent in the technology sector cited that their other professional experiences had better working conditions than campaigns. In terms of hiring, four women specifically pointed out that technology companies more frequently relied on skills-based assessments and merit when hiring and promoting employees, while campaigns were often premised on networking and internal relationships. Seven women with backgrounds in the technology sector argued that technology companies better support employee work–life balance than campaigns do. These

women cited that while taking personal time off in the private technology sector often did not negatively affect their professional reputation or responsibilities, the reality was different on campaigns: 13 women described believing that they would lose influence, status, and responsibilities on the campaign if they took time off. A total of 20 women cited that they felt pressured by colleagues to work long hours to prove their commitment to the candidate. A total of 15 participants described this general phenomenon of political campaigns facilitating a "mission over money" mentality that fosters atmospheres where 90-hour work weeks are the norm and other priorities, such as family, should be cast aside. For example, a state data and analytics lead for a Democratic presidential campaign described how,

> … if you're going to work for a campaign, you're probably either doing it because you're a campaign veteran, a person who loves campaigns. Or because you really care about the cause. If you really care about the cause, they have a lot of room to just make you work like crazy and not pay you well. You're not there for yourself, you're there for the mission. And that was absolutely, I don't want to say manipulate us, but sort of … every second of your work counts. If you're not here for this half hour, that's a half hour less of working for your candidate.

Perhaps this is why among all campaign staffers in our dataset, approximately 81% ($N=757$) were only employed for one presidential campaign, while 18% ($N=169$) worked on two campaigns. Less than 2% ($N=14$) of staffers were employed by three or four campaigns. Notably, women consistently made up about a third of staffers working on one (32%, $N=241$) or two (33%, $N=56$) campaigns, but among staffers of three campaigns, the percentage of women dropped steeply to 23% ($N=3$). On the basis of our interview data, we suspect that part of this drop-off in representation of women in repeat campaigns relates to the lack of work–life balance and women's disproportionate roles as family caregivers.

In terms of leadership, 11 women stated that there are very few people at the top of a campaign hierarchy making the important decisions, and those decision makers were often men. This fits our quantitative findings regarding women and men in director-level or higher roles on campaigns. For every one woman who has served in a director-level or higher role, nearly three men have done the same (at 29% and 71%, respectively). The gap continues to increase by the number of these leadership roles: Among those in two director-level or higher roles across multiple campaigns, 89% ($N=39$) were men and only 11% ($N=5$) were women. Further, nearly three-quarters of all women (73%, $N=228$) have not served in any director-level or higher role, compared with 64% ($N=433$) of men. Our participants argued that the small group of decision makers around candidates are often men, given the nature of the political field and hiring, and this works to limit the voices of women. Even on a comparatively diverse Hillary Clinton 2016 presidential bid, one former staffer who worked at the state level as well as at the campaign's Brooklyn headquarters described the role of senior men on the campaign:

> Sure, it kills me, but I think part of that [a campaign that rewarded men, seniority, and status over merit] is a reflection of Hillary and the inner circle she's traditionally surrounded herself with. That ruins me to say because I've defended her for years and years. I think it's okay to find problematic things with our favorites, but I think it was that sort of almost like rigidly

hierarchical system that led to having more people in power who didn't deserve to be in power, but were, and that led more smart young women to sort of be ignored at the expense of older white men who mostly, literally almost all, older white men who were just like, "This is the way we're going to do it and this is the way it's going to happen and you can like it or you can leave."

This raises the issue of both the lack of women in leadership positions on campaigns in political tech and the importance of representation. The benefits of women in positions of power and leadership on campaigns was a theme brought up across our interviews. Our participants argued that women in leadership roles worked to actively combat unhealthy work practices related to gender and create a more inclusive environment, discussed in greater detail in the next section. They also cited that women directly work to empower and promote fellow women. Moreover, lower-level women staffers believe it is more attainable to become a director when they see women in those roles and want to pay forward what was done for them. For example, 32 participants argued that if campaigns had more equal gender representation at the senior level, they would have better work environments and communications. As one senior member of the 2012 Romney campaign argued, "Would it have been better if there were more women in more roles? I would say yes, organizationally and also from an output perspective."

The barriers women face to being included in campaigns and advancing in their careers

Once women are hired into political tech jobs on presidential campaigns, the workplaces they encounter have underlying gender dynamics that limit their voices and potential to advance in their careers. As our participants roundly described, women face three key barriers to inclusion and advancement: the "boys' club" culture, gendered expectations and stereotypes, and limited opportunities for credit and career advancement.

Campaign culture as a "boys' club". A number of participants argued that campaigns, particularly within the domain of political technology, are still a "boys' club." Women described experiencing both formal and informal forms of exclusion from opportunities to socialize on campaigns. Some participants cited that they were not invited to hang out with "the boys" outside of the office—at those informal sites of socializing that often have important professional consequences in terms of helping staffers build relationships and trust. Women also pointed to more explicit forms of exclusion: five women in leadership positions said they were not invited to meetings they should have been at and that people were not reprimanded for excluding others from meetings, even if they did not have a good reason. One digital staffer on a 2016 Republican presidential campaign, for instance, described the systematic way she was left out of key channels of communication on the campaign:

My other boss just flat out left me out of meetings and wouldn't give me certain positions, only gave his buddies that were men certain positions and kept them in the loop and let them basically do whatever they wanted.

Further, campaigns are notorious for their stress, long hours—and booze. One woman cited that drinking late in the office (or outside of it) is often a common part of the campaign experience, and participants cited experiencing a number of situations that blurred lines between professional and social, which increased the possibility of inappropriate behavior. Women cited that this could make them feel uncomfortable in the office and outside of it, which impacted their work and professional relationships. For example, one woman stated that a man who was often inappropriately flirtatious texted her to "prepare your body" for a night of drinking at bars. A senior state digital staffer on Hillary Clinton's 2016 presidential campaign described how:

> there was just always like a fratty vibe to campaigns, like you're always working late, there's always alcohol. People who could and should report probably feel uncomfortable given the nature of how weird your relationships are with people you work with on the campaign.

Inappropriate behavior could be hard to define in campaigns because the lines between working and personal relationships were often blurred: 15 women, for instance, discussed offhand sexist or gender-related comments or jokes being a routine part of office culture. Three women mentioned specific incidents where they felt uncomfortable about flirtatious comments made by men (either peers or superiors). One staffer stated, speaking about campaigns more broadly: "Everybody has been making the same jokes that every time a new article comes about #MeToo, like when is it hitting campaigns?"

At the same time, 19 women cited having to navigate masculine-trait workplaces that were, at times, characterized by conflict and aggression rather than collaboration. At the same time, four participants argued that many women lacked the confidence to speak out in campaign settings, especially to call out problematic behavior, but more broadly to make their voices heard. A senior digital staffer on Hillary Clinton's 2016 presidential campaign, for instance, described experiencing "imposter syndrome" (Morawski, 2016), where she hesitated to share ideas and make suggestions because she felt like an outsider to the campaign and was unsure about her ideas—despite having significant experience and expertise in her work domain. Research has found that "imposter syndrome," or the mistaken belief that one is unqualified or underqualified relative to peers, disproportionately affects women and people of color (Charman-Anderson et al., 2017). Even more, these women compared their own self-doubts with the personas of the men they worked with: a number of participants discussed how men on campaigns were more confident and assertive than women. One 2016 Republican primary campaign digital staffer stated, "I never put myself out in the public eye. I have not been someone toting and tooting my own horn, which is another thing these guys do really well."

Gendered expectations and stereotyping. Participants stated that one thing feeding "imposter syndrome" was the fact that their skills in traditionally masculine domains such as coding, software development, and video editing were underestimated or demeaned by men with whom they worked. Indeed, 12 participants described work cultures where men were inherently regarded as more competent and talented than women. A total of 15 women thought that men in senior leadership assumed they were less technically skilled than men who they worked with, even if they had extensive industry experience. A number of women who came from outside of the political field to a

presidential campaign cited their lack of campaign experience as one reason they refrained from sharing their expertise, which in turn limited the opportunities for innovation that people joining campaigns from outside of the field can offer (Kreiss and Saffer, 2017).

Research participants also noted that men often dominated meetings, providing little space for women to voice their opinions, and regularly discounted women's competency or explained clearly understood concepts—a phenomenon colloquially known as "mansplaining." A total of 18 participants stated that men often talked over women in meetings and devalued their speech when they did interject. They cited that aggressive personalities were especially prevalent within the highest ranks across all campaigns, but when women tried to adopt more aggressive demeanors to assimilate, they were punished for breaking gendered behavior norms. This occurred on both sides of the aisle. Participants also stated that they often felt stereotyped and boxed into traditionally feminine roles: Eight women from both Democratic and Republican campaigns discussed being expected to take on traditionally feminine responsibilities such as clerical work that they believed they were overqualified for and were not part of their job descriptions. As a senior tech staffer on the 2016 Hillary Clinton presidential campaign described, pointing to what a number of women cited was a phenomenon of "progressive hypocrisy" where men who worked in Democratic politics believed they could get a "pass on feminism" because they are progressive:

> I mean, I think there was a lot of, yeah, progressive men who think that they are experts on particular topics … I got mansplained so much on that campaign, it was ridiculous, and I remember joking around and being like, "Is it still mansplaining if it's like a woke, gay man who's mansplaining?"

As this staffer makes clear, even in the best-case scenario—which a number of women described as the 2016 Clinton campaign, where there was greater representation and inclusion of women—participants still stated that they were the ones calling out men's problematic behavior, not everyone felt comfortable doing so, and it did not often change problematic behavior.

A total of 15 women argued that sexism does not disappear even when women reach positions of power, pointing to the unique challenges directors and managers faced on campaigns. Even when women were in higher-level positions, they believed their leadership styles were judged by different standards (which echoes the research, see Fridkin and Kenney, 2014; Powell and Graves, 2003). Eight women argued that stereotypes about women in positions of power were prevalent: participants cited not being able to act as leaders without being labeled a "bitch" and that they could not be detail oriented without seeming like they "nagged" others. At the same time, 18 women reported that aggressive personalities were especially prevalent within the ranks of men in senior campaign roles. Women on both sides of the aisle told stories of these men yelling to quell opposition and creating environments where abrasive competitiveness was ubiquitous. Women believed men's behavior that belittled and devalued women's opinions was rarely reprimanded, since leaders themselves often employed this approach.

Participants also reported that women in leadership on campaigns were also expected to engage in "emotional labor," referring to the ways workers manage their feelings in

accordance with organizationally defined expectations and rules—involving listening, validating, and serving as a support system for other staffers (Wharton, 2009). Four participants noted that women expend more time and energy on emotional labor than men. As one senior staffer on Hillary Clinton's 2016 presidential campaign summed up, the "women really ended up taking on the emotional labor of managing the team and ensuring that relationships with other departments were productive." This suggests that men were not expected to be as invested in the social and emotional work required to make workplaces function—which could lead to differences in promotions or credit if emotional labor is not appropriately recognized by campaigns.

Credit and career opportunities. Women contended that they were generally more collaborative, as opposed to competitive, and that men's ability to take credit for ideas impacted how campaign leadership and the outside world—such as the press—perceived the leaders of tech teams and originators of campaign innovations. A total of 11 participants believed that men were both more likely to seek out and receive credit for ideas, even if women came up with them, and that this had significant career implications. Credit inside campaigns is essential to advancement within organizations, but it also extends outside the campaign in consequential ways: the press interacts with campaign staffers and, in the process, validates certain people as the drivers behind innovative campaign practices and technologies. Since men on campaigns are often connected to innovative tech in media, they are the ones who continue to be profiled, get invited to conferences, and find professional opportunities after campaigns end. As one digital staffer on a 2016 Republican campaign stated, men often work to put themselves in the public eye, which in turn leads to more job opportunities for them. Our quantitative results also showed that this has implications for staffers' opportunities for entrepreneurship after campaigns: among the 119 staffers who founded 125 firms and organizations between 2004 and the months after the 2016 cycle, 94 men (79%) were listed as founders or principals of these organizations, compared with only 25 women (21%).

The lack of accountability on campaigns

In addition to the challenges women face navigating these male-dominated workplaces, they have few ways of holding people accountable for inappropriate behavior or arbitrary exercises of power and fear retaliation for reporting. In this context, coupled with the time-delimited and mission-driven nature of campaigns, women often avoid or ignore issues in the workplace.

Women reported that campaigns often lack the human resources (HR) infrastructure common to other workplaces. A total of 36 women pointed to two key problems: campaigns either lack a formal HR department entirely or the department is understaffed and has limited resources. Both problems lead women to doubt that HR departments could effectively resolve workplace issues. Women argued that when formal HR departments on campaigns do exist, they are often understaffed because campaign budgets are tight and HR is often an afterthought, given the mission of getting a candidate elected. For example, on Hillary Clinton's 2016 campaign—which had more than 800 staffers at its headquarters alone—a team of four HR and diversity officers were responsible for approximately 4200 staffers nationwide (Lee, 2016).

This lack of effective HR infrastructure has implications for all staffers, but women, in particular, see the repercussions disproportionately affecting them when they encounter workplace issues and have no means of holding people accountable. For example, 14 women cited fearing that anything they requested or any complaint they made—from asking for a higher salary to reporting inappropriate behavior—would get them fired or negatively affect their jobs or careers. As a staffer on a 2016 Republican presidential campaign described, speaking in the context of a request for a salary increase, "If someone complains or says anything or whatever, they'll fire them and bring on someone else who's young and who will do it for nothing."

Indeed, only 12 women reported the presence of a functional HR department, and 10 women specifically stated that there was no reliable system for employees to report conflicts without the fear of retribution. As a staffer on a 2016 Republican presidential campaign described, "Thinking back also, no, I don't feel like there was a place I could have gone … I felt like I would have been retaliated against, and I would have just been fired if I complained." As a result, 10 women stated that they often stayed silent due to their fear of retaliation. Participants described various consequences of reporting workplace issues, including salary cuts, spiteful treatment, a ruined reputation, or burning bridges for future work. As a digital staffer for Hillary Clinton's 2016 campaign pointed out, "you don't want to be the person that shakes things up." Eight participants had witnessed and/or experienced several types of explicitly inappropriate behavior from men on campaigns, ranging from verbal abuses of power to offensive remarks—but they also stated that most of the instances were simply not reported. Instead, 10 women cited that it's more common to just warn their colleagues to avoid problematic coworkers. As a 2016 Republican primary campaign staffer pointed out,

> If you go out and complain or report anything, it's kind of like you have a target on your back. If you make a complaint, you're out of the game. The problem is when you're in this position, these guys are paying your salary. I heard someone say once, 'Don't bite the hand that feeds you.' If you complain and then they can fire you for any reason.

Women also report having to pick up the slack for men who may be less qualified for their position than the women serving under them. In this context, women described a common practice called "layering," where a lower-level staffer unofficially takes on the responsibilities of a higher-level staffer. Women described a mentality that campaigns are too short and high-profile to fire certain people, especially if it might lead to bad press; instead, campaigns disproportionately asked them to take on the work of underperforming men (particularly their superiors) without an increase in pay or position. Without accountability in the workplace, women staffers tend to ignore the issues facing them in order to keep the mission of the campaign on track, which often outweighs the desire to shake up the system.

Discussion and conclusion

Although we do not have the ability to test them directly in this article, as a call for future research, we highlight here a number of the likely implications of these findings for campaign communications, organizational processes, and electoral outcomes. We then argue

more broadly for the direction that future research in this area can take. First, there is the basic question of how campaign staff and gender dynamics shape the communications content of campaigns. If, as Dittmar (2015) shows, campaign staffers and consultants shape this content, then the production (or "business," Grossmann, 2009) side shapes how candidates run, the messages the electorate sees, and ultimately who is engaged in democracy. Gender equity on campaigns would likely make for more diverse and effective ways of engaging the electorate, in much the same way that scholars of cultural industries have argued that gender shapes the content of media organizations (Duffy and Schwartz, 2017). Across our interviews, on both sides of the aisle, women argued that gender-balanced campaign staff create qualitatively different content that better engages women in the electorate. More broadly, if a campaign wants to reach, persuade, or mobilize its targets, it needs a team that can produce content that reflects and appeals to who they are. As a senior state digital staffer from Hillary Clinton's 2016 bid argued,

> Having a bunch of white men in a room trying to decide how to get Latina moms out to vote is not going to be as successful as making sure that people who are part of that community are at the table.

While we believe equity in the campaign workplace is important for its own sake, and engaging in communications to a broader swath of the electorate is important for democracy, participants also pointed to there being implications for the work and outcomes of campaigns. For example, our interviewees argued that gender equity would make for better-organized and more effective campaigns, echoing the findings of the body of literature on organizations and technology detailed extensively above. As one senior member of both of Obama's presidential runs argued,

> Men and women generally bring different skill sets to the table and different perspectives to the table. So a diverse leadership team creates a better culture, creates a better product, and has a clearer vision that works for more people.

The women we interviewed said that more diverse teams within campaigns are better able to anticipate, recognize, and solve problems, a finding that resonates with work in organizational sociology. Our participants argued that the more people of diverse backgrounds campaigns can bring to the table, the more effective they will be at understanding challenges and generating multiple innovative solutions to them. In addition, bringing women into leadership means having a more diverse set of ideas and experiences campaigns can draw on, enabling the organization to better question its core assumptions and long-held ways of doing things.

Gender equity would also make for more meritocratic campaigns. Women expressed that campaigns can be challenging because of "bro" cultures that exist when men are predominately in power and there is little gender diversity. Structural disparities in hiring and leadership, inappropriate behavior in the workplace, sexual harassment, and the routine silencing of women's voices on campaigns all create an uneven field for women. Addressing these things would help the best people and ideas to rise to the top. Relatedly, our participants argued that gender equity makes for better political tech. Creating design

that is responsive to the people who are going to use technologies—whether they are staffers on a campaign or volunteers in the electorate—requires diverse teams that can understand different users. A senior member of the more gender-equitable Clinton 2016 campaign argued that in her experience,

> collaboration was better. I think our products were better. I think we resolved problems better, and we talked about collaboration and how we worked together, the process of working together, more than average, more than just the content of the work, and things that we were building.

Taken together, political tech is both a unique area of campaign practice and one where women face steep challenges in terms of representation, inclusion, and accountability, as we detail throughout this article. But the women in this space believe the stakes are high. They argued that gender equity on campaigns is not only desirable from a democratic perspective but it could also make for more effective campaigns, from the dynamics of teams and the ways they generate and take up good ideas and promote talent to the content and tech that campaigns deploy to engage the electorate.

Finally, it is clear that there is a need for more research on gender and the workplaces of campaigns and other political organizations in addition to media industries more broadly (along the lines of Hill's (2016) work)—especially given its likely power to affect organizational processes, communications content, technological development, and media use. The specific study of political technology here offers an extreme case at the intersection of two historically male fields, but we believe the findings will resonate in other communication subfields, especially those with a strong emphasis on understanding production processes in the context of the rapid technological shifts that have occurred over the past 25 years. To understand media production on institutional, organizational, and practice levels requires accounting for the ways that gender shapes the dynamics of workplaces and who can wield power within them; the structure, status, and compensation of particular organizational positions and entire professions (see Mayer et al., 2009); and ultimately the communications and media content that organizations produce.

For example, to date, studies that analyze the ways that technology is changing political and other organizations have often failed to seriously incorporate gender into their objects of analysis. This is a significant oversight in the field as a whole, and as this study has demonstrated, scholars should adopt more conscious research designs to analyze the gender makeup and dynamics of teams and organizations and analyze the effects they have on organizational performance, electoral outcomes, media production processes, communications content, and representation in fields and industries. More broadly, it is likely that the field of politics looks similar in a number of highly salient ways to other fields that have been reshaped by technology in recent decades. As computer scientists and data and analytics skills come increasingly into demand, scholars have noted the influx of new entrants to fields ranging from journalism to entertainment. Given the technology industry's own challenges with gender equity, it is likely that many of these new entrants are not only men, but they also carry with them the gendered logics of the technology sector.

At the same time, while this study revealed the experiences of women in a field that is being reshaped by technology, there are a number of limitations in our data that should shape the research agenda going forward across different media industries. Unfortunately, our dataset lacks data on age. Future research is necessary to determine whether and how the ages of women working in technology in different fields shape their experiences of gender, the ways that men interact with and around them, their organizational decision-making power, and their career paths. At the same time, we lack explicit data about the race and ethnicity of women working in political technology. Across our interviews, however, a number of women raised the issue of intersectional identities—the ways that being a woman intersected both with their ages and racial and ethnic identities and shaped their work and career experiences at the intersection of politics and technology. A number of white-identifying women, for instance, spoke of being conscious that campaigns broadly, and political technology specifically, were primarily white spaces. The few self-identified staffers of color that we interviewed (reflecting what numerous women described as the state of the field), meanwhile, spoke about their unique experiences in political technology and especially about the importance of representation.

For example, as a call for more research into the experiences of women of color in political technology and in technology spaces in other media industries more generally, and as a testament to the power of equity in the workplace, we end with the voice of a state deputy digital director on the Clinton 2016 campaign. This staffer described moving from a congressional office staff made up of primarily white men to a Clinton campaign staff with greater gender and racial diversity. She discussed how the change affected her sense of belonging and perception of her ability to advance in her professional career:

> Walking into work every single day where you have a team of really, really strong women leading you versus walking into work and then seeing the chief of staff who was a balding white man and you have a lot of other white men in power positions, you don't see yourself in power positions. It's hard to imagine yourself moving up. I think a lot of it for me is just sort of, it's just seeing women or women of color in leadership. It really changes the entire work environment for me.

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