CIO Strategies for Overcoming Gender Bias Obstacles in IT Organizations and Guidance for Men Who Want to Remove Them.

A qualitative study of higher education women CIO’s and their experiences with overcoming gender bias in their careers. Recommendations for aspirational women IT leaders and advice for male CIOs on how to manage gender bias in their IT organization.

By Steven C. Burrell, Ed.D.
Vice President of Information Technology
And Chief Information Officer
Forward

In 2015 a colleague and friend of mine, Dr. Bob Orr, of Georgia College and State University and I conversed over dinner one evening about the strategic importance and difficulties of recruiting high-quality applicants to our institution’s IT services organizations in the face of rising competition for technology skills. We exclaimed about the lack of women applicants in our pools, and the excellent talents of the ones we were able to attract and retain. Citing the moral imperative and the mission of higher education, we decided it was incumbent upon us to do something about it and started discussing ways we could facilitate broader understanding among our colleagues about the opportunities, benefits and difficulties of recruiting, retaining, and developing women leaders in IT.

Feeling ignorant and naïve about such things, I set about to identify high-achieving women in higher ED IT who would share their stories with me and help me explore what might be done to improve our situation. I recruited and interviewed 13 amazing higher education CIOs and set about to interview them to discover their secret to success and their advice on what we could do to develop environments conducive to the success of women in our IT organizations.

It is now January 21, 2017 and I’m watching millions of women (and men) marching in Washington and other cities, feeling a bit guilty that I had not finished a project I started 2 years ago – to discover common threads leading to women’s successful ascent to the CIO role in higher education, and what we can do as a community of higher education technology leaders to help aspiring young women confidently rise to leadership roles.

Flash forward and on the eve of publishing this work, I’m reading about venture capitalist Justin Caldbeck’s forced resignation due to sexual harassment and the July 15, 2017 USA Today report “Sexism & Silicon Valley” exposing the sexism that seems rampant among venture capitalists. Today, I am watching the news about the blatant racist demonstrations in Charlottesville. For the country who claims to be the most advanced in the world, we have a very 18th century problem on our hands.

Perhaps not surprising to my women colleagues, I discovered there is a very important message in these outcomes directed at men who need to understand and address their biases. Moreover, we need to take an active role in, and be accountable for, the success of these wonderfully talented rising women in our higher education IT organizations. This paper creates some context for the hurdles that men create for women as they ascend to IT leadership roles and how 13 women CIOs successfully navigated gender bias. Perhaps more importantly, it explores activities that men should take to remove obstacles and create environments where women can work and advance themselves uninhibited alongside their male counterparts.

I want to personally extend my appreciation to the women CIO leaders in higher education who participated in this study. I hope readers of this work find their insights as informative and inspirational as I have.

Sincerely,

Steven C. Burrell
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Introduction

In the fall of 2015, I interviewed women CIOs at higher education institutions in the United States as part of a phenomenological research study. I had previously known most of them during my 35-year career in higher education and having been a CIO at five different institutions, knew quite well the challenges associated with the role. I was troubled by the fact that, according to the Center for Higher Education CIO Studies (CHECS), only 28% of higher education CIOs are women. While the most recent figures show a 3% increase from the prior year and the highest percentage since CHECS began measuring gender among CIOs, CHECS has consistently reported the severe underrepresentation of women in CIO roles since 2008 (Brown, 2016).

I sought to understand what we could do as a community of higher education technology leaders to help aspiring women IT professionals confidently rise to leadership roles. In the 20 months since that time, a lot has happened in higher education, including the election of Donald Trump as the 45th president of the United States and the Women’s march on Washington. Most recently, the blatant sexism of Silicon Valley has been exposed, juxtaposed against a growing body of knowledge around the importance and value of diversity in our organizations. Now, with the knowledge gained from those interviews and a renewed self-perspective, I also want to raise awareness among my male colleagues about how they can be supportive of women, and overcome our unconscious biases that inadvertently undermine the aspirations of women in our IT organizations. This paper identifies the status of women in IT, advice and wisdom from 13 women CIOs, and a call to action for men who embrace the idea that women’s issues are not just issues for women, but for men.

Thirteen High Performing Women CIOs in Higher Education

Thirteen higher education women CIOs from a variety of institutions ranging from small private institutions to large public research institutions accepted my invitation to interview. All of the CIOs had prior IT leadership and three of them came to their current CIO role from industry rather than higher education institutions. They averaged nearly 21 years as CIOs and represent more than 300 years of higher education IT leadership experience. Eleven of the 13 respondents raised children during their ascent to leadership positions. All participants had earned a bachelor’s degree and 10 had obtained an advanced degree, five of which were in STEM fields.
In their ascent to these top IT leadership positions, the participants identified many gender-based obstacles. They were passed up for promotion because they were having or adopting children. They were frequently ignored at discussion tables and male counterparts usurped credit for their work. Their technical skills were diminished or ignored and as a result, not given the same opportunities as men to professionally develop. They were often shut out of social events where, as one CIO in this study put it, “the real business was done.” They were even subject to blatant and repeated sexual harassments. To say their journey was difficult is an understatement of the truth.

Despite these difficulties, these women persisted to IT leadership roles in their institutions. They exhibited great determination, hard work, measured discretion, and a keen understanding of themselves and the environments they worked in. They spoke about the importance of building their confidence levels early, and being assertive about their needs and issues, asking to be included and taking on risky assignments to build a record of experience, acumen and accomplishment.

It became clear that these women leaders were survivors who persisted and learned to thrive in complex organizations by working on relationships one at a time, building up their support network. They also sought out and found advocacy for their roles and through these relationships, gained confidence and a voice. These CIO leaders illuminated the value of relationships with key individuals who guided and advocated for them. In particular, nearly all of them cited the importance of male mentors. It is on this point that this paper explores important guidance to male IT leaders on recognizing our unconscious biases and actively supporting women in our IT organizations.

The remainder of this paper explores in more detail the experiences and perspectives of 13 women CIOs in the context of the current issues facing women in IT, their advice on dealing with gender bias, the implications for IT leaders, and specific advice to men on how they can facilitate environments that provide women equal opportunity.

The Current Status of Women in IT

The Under-Representation of Women

According to the Education Advisory Board, female students make up more than half of all college students, but only a quarter of college presidents and higher education board members. The CHECS data on gender is an important barometer as higher education leaders seek to bolster the number of women in science, technology, engineering, and mathematics (STEM)
fields and reverse the steady national decline of women in computer occupations from a peak of 36 percent in 1991 to 25 percent in 2008 (Bureau of Labor, 2016).

Race diversity among women CIOs is also a national problem with Latinas and Black women holding only one percent and three percent of computer occupations, respectively (U.S. Department of Labor, 2015). CHECS reveals that higher education institutions also experience under-representation and a lack of diversity among CIOs of whom only 10 percent identified themselves as non-white (Brown, 2017).

The Impact of Retirements
CHECS most recent report indicates that 53 percent of all higher education CIOs plan to retire within the next 10 years. Prior CHECS studies have revealed that the retirement plans for men and women CIOs were different, with more women indicating they would retire within the next decade. These insights combined with the relatively low level of interest among women aspiring to the CIO role, leads to the prediction there could be fewer women leading technology departments in the future (Brown, 2017).

Recruitment, Development and Retention of Women in IT
Building a shared understanding of why women are really leaving the IT profession is critical for improving recruitment, retention and advancement of women IT professionals. It has been posited that women are not exiting IT careers primarily for family concerns, but may leave technology positions for lack of support. Women cite experiences in the workplace environment such as limited opportunities for professional development, lack of support from management, difficulty in balancing work and other competing responsibilities, and undermining behavior from managers (Jo, 2008). A study by the Kapor Center for Social Impact found that toxic workplaces that promote harassment, stereotyping and bullying are driving away women and people of color, undermining many companies’ efforts to increase diversity and costing an estimated $16 billion a year (Guynn, 2017).

The Gap between Strategy and Reality
According to a study by McKinsey (2017), there is a gap in the application of top-level commitment into truly inclusive work environments. Even when top executives say the right things, employees don’t think they have a plan for making progress toward gender equality, don’t see those words backed up with action, don’t feel confident calling out gender bias when they see it, and don’t think frontline managers have gotten the message. Moreover, women of color face the most barriers and experience the greatest job turnover rates, giving up on their aspirations for becoming a top executive.
Several of the women CIOs interviewed in this study spoke to their naïveté to gender biases. One participant stated, “I didn’t grow up that way, and so I didn’t really think about it until I started experiencing it at work.” Another stated, “I can have a gender bias story every day.” These comments are substantiated by the research done by Orser, Riding, & Stanley (2012) who found that women in IT confront barriers in their careers including gender influenced self-efficacy, a lack of social capital, limited networking opportunities and a detracted sense of belonging.

The Path to the CIO Chair is Through Advanced Education

One reason there may be fewer women in IT leadership roles is that there are fewer women studying computer and information science - a traditional path to the CIO role. In 2014, more women received bachelor’s degrees than men but earned just 18 percent of undergraduate degrees awarded for computer and information science, down from a high of 37 percent of computer-science undergraduate degrees in 1984. Moreover, women in the computer and information sciences represent only ½ percent of all bachelor’s degrees earned (U.S. Department of Education, 2014). Further, just one in five engineering students is female, but women dominate three STEM fields: statistics, botany, and health care (Tyndall, 2017). Women who persist and rise to CIO roles eventually outpace men, earning advanced degrees at a higher rate than male CIOs by 9%.

Figure 1. CIO Degrees by Gender (Brown, 2017).
While CHECS latest data reflects national trends, finding that women CIOs hold terminal degrees at rates higher than males, men are earning degrees in science, technology, engineering, and math fields at much higher rates than women. The good news is that CHECS reports an increase in the number of rising women technology leaders (TLs) in our higher education IT organizations, rising from 31 percent in 2015 to 35 percent in 2016. In addition, there were more aspiring female IT professionals in our institutions who are interested in becoming a CIO, reaching a new high of 37 percent.

**Advanced Degrees Help Women Overcome Bias**

Women may use education to counteract bias and compete with their male counterparts who have less education. Hence, education may be one area where women can create a distinct advantage for themselves over their male counterparts. Formal education creates an advantage given that 89% of senior higher education executives agree that the CIO should have an advanced degree. Notably, 56% of these executives indicated a CIO should have a Technology major and another 39% thought the major was not important (Brown, 2016). These perceptions open the door to women who may hold advanced degrees in non-technical disciplines.

The CIO’s interviewed for this study indicated that advanced levels of education helped them establish credibility and overcome bias. One CIO stated, “The Ph.D. added credibility, and changed how I was treated and perceived by others inside and outside the academy.” Several of the CIOs also pointed out that obtaining certifications (e.g. ITIL, CISSP, TERP10) could also be helpful in advancing careers and represent undisputable evidence of technical acumen. In the end it may not matter as much what additional education or certifications aspiring IT leaders may have, but that they’ve engaged in learning activities which they enjoy, are reflective of their interests and inform their practice.

**The Education Pipeline May Not Be the Real Issue**

The data suggests that women are becoming increasingly invisible in the thriving technology and computing sector despite the fact that women have been outpacing men in earning bachelor’s degrees 3 to 2 since 1981 (US Department of Education, 2014). However, women represent only 25% of the tech and industry workforce. Moreover, more than 50 percent of women leave their organizations at the mid-level point (10-20) years in their career (Hewlett, Luce, Servon, Sherbin, Shiller, Sosnovich, & Sumberg, 2008). When it comes to leadership positions, 30 percent of technology executives stated that their groups had no women in leadership positions (Kvochko, 2016). By 2020, 1.4 million computer science jobs will be available in the U.S. yet we will have just 29% of the qualified graduates to fill them, and less than 3% will be women (Tech Crunch, May 10, 2016).
From another point of view, the trickling pipeline of women with technical degrees may not be the real problem; it may be our perceptions of the qualifications needed to be IT leaders. CHECS identified that 56 percent of institutional management teams responsible for hiring CIOs believed they should have a technology degree (IT, IS, Computer Science, etc.) while 39% indicated the major was not important.

To increase the number of women in CIO roles, higher education institutions must cultivate the next generation of IT leaders from non-technical areas, providing necessary technical training to extend acumen from other areas. The evolving role of the CIO provides an excellent opportunity to seek out women who may not have deep technical acumen, but bring other valued skills. The opportunities for women may increase as the role of the CIO evolves from an inward focus on technology to an outward focus as a higher education strategist (Burrell, 2015). This opens up opportunities for new paths to leadership roles in our IT organizations and hence, women in leadership roles.

Figure 2. IMT Perspectives on Degree Major a CIO Should Have (Brown, 2016).

From the author’s own experiences, some of the best IT professionals have earned degrees in liberal arts and social science programs. These professionals bring a variety of non-technical
expertise such as critical thinking, technical writing, problem solving, and creative skills that are increasingly valuable to our evolving IT missions, and among them are women, eager for opportunities to take on leadership roles. The CIO’s interviewed in this study cited early interest in STEM fields and the influence teachers and others had on their career interests but many obtained their degrees from non-technical areas.

Managing Turnover Intentions of Women in IT Jobs

Historically, turnover among technology workers is more than twice as high for women at 41 percent, than it is for men at 17 percent (Hewlett et al., 2008). Successfully recruiting women to an IT career track is difficult, so developing and retaining them for roles in higher education IT organizations is a critical strategy to closing gender diversity gaps.

*It is critically important that aspiring female IT leaders be retained within higher education and not lured away to other, higher-paying industries. Moreover, both men and women CIOs must actively work to remove gender barriers that discourage women from choosing STEM careers and become active advocates for the next generation of rising women IT leaders in our institutions. In the face of increasing competition for IT professionals, the importance of creating environments where women are treated equally and can develop alongside their male counterparts is critical to our institutions’ success.*

*Equal Pay for Equal Work?*

The issue of equal pay for work is an important extrinsic job satisfaction factor. This is especially true when the market demands for IT skills is high. More importantly, fair pay is reflective of organizational justice and an indicator of culture and climate that embraces diversity. Tyndall (2017) reported that young women earn $9,000 less than men right after college and may be exacerbated by the fact that only 26% of young women negotiate their job offers—and few of those who do are successful. CIOs in this study mentioned early experiences with equal pay with one commenting, *“I made fifty two hundred dollars while the two guys with lower GPA who sat next to me in class for years were hired and made six thousand dollars. That was my first experience. I got the lesser job with the best grades. And they got the better jobs with poorer grades.”*

While this may be the experience of women early in their career, once they reach the CIO level, their pay often exceeds men as evidenced by the CHECS data (Brown, 2017). This data raises the notion that, if women who are early in their career might benefit from having developed confident negotiating skills and other assertiveness skills that could allow them to negotiate on par with their male counterparts.
The Demands of IT Work

IT leadership roles require significant time commitment. Nevertheless, investment of time and effort seems particularly important for women aspiring to the CIO role because of the steep slope women have to climb to prove themselves. As one CIO put it, "Men get promoted on what potential they have, women get promoted on what they've proved they can do - eight times."

IT work at all organizational levels can be challenging and demanding given the increased importance of technology in our institutions. IT workers experience job turnover more frequently than other fields due to various job stress factors (Burrell, 2013). These pressures on top of the gender bias adversity women experience may pose too much for them to persist. Women CIOs’ in this study stated that they had to work long hours, sometimes at the expense of family or their own personal health. A CIO stated, “I worked harder. I just worked harder.”

Managing Work-Life Balance

More than half of the women CIOs in this study commented on the impact of their work-commitments on families and significant others. One CIO indicated her daughter said, "You know mom, I'm not going to be like you when I grow up. I'm not going to have that kind of job and be working all the time." Maternal responsibilities may tug on the aspirations of women CIOs who are primary care-givers in their family and when coupled with pre-existing biases against women and the demands of IT leadership roles, it may be too much for them to persist.
Best Job Ever!

On the other hand, one of the participating CIOs cited the flexibility of schedule and nature of the work lending well to her ability to co-mingle work and personal commitments stating, “Technology leadership is really geared to moms. How do we get the message out?” Others stated that they did not feel as though their work inordinately affected their personal lives. A key factor may be how many obligations exist outside of work, or the support network available to moms in IT. The CIOs in this study who had children reported having substantial assistance with responsibilities outside of their work.

Gender Bias Today: It’s Not Better or Worse, Just Different

CIOs in this study were mixed on their thoughts about whether today’s IT women have it easier or harder, better or worse, than their predecessors do. A shared viewpoint among some of the CIOs in this study was that it is not necessarily easier or harder, just different. One respondent noted that there are more role models for women today, laws and policies that prohibit discrimination, and many more women’s advocacy groups than when she was ascending through the IT ranks.

Respondents pointed out that in their perceptions, many baby-boomer generation men have turned to more passive aggressive behaviors today versus the blatant displays of male chauvinism exhibited decades ago. One CIO pointed out that, “Men in the 20-40 range don't have the same attitudes in the 40-50 year old range. Older generations may not let go of biases around pregnancy and technical competence. Sometimes, people have to retire for things to change.” A CIO spoke of her own experiences with passive-aggressive behaviors, “You're not asked to participate in teams or things like that.” Exclusion and errors of omission are designed to limit the influence of women and these type of scenarios can be hard to deal with because women may not even be aware of them. As a respondent noted, “It's easier to deal with it when the sexism and bias are head on.”

Two of the respondents suggested that women are subject to more passive-aggressive behaviors where there is a difference between our speech and our actions. One CIO stated, “Some of us are just romancing the idea of diversity.” Gender bias can manifest in men’s adherence to law and policy language, but actions often underscore true dispositions. Another stated, “Sometimes it is not about gender at all, but about an outdated leadership model and stale culture.” This seems to underscore McKinsey’s (2017) findings of a leadership strategy and the organizational execution gap mentioned previously in this paper.

Gender bias and passive aggressive behavior towards women is not limited to just males. These respondents also noted that sometimes women are a source of passive-aggressive undermining of other women. “[...] and there are women out there that do not want to see other women...”
succeed and work to undermine them, and I don't get it.” Another CIO commented, “So there's criticism about old boys' network, but there's no such thing as an old girl network.” Another CIO stated, “It is important to elevate other women around you as you move up – our boats rise and fall on the same tide.”

Unconscious Bias and Micro-inequities
Not all bias against women is blatant or even intentional. Unconscious biases result when our preexisting beliefs and attitudes about particular groups of people subtly influence behaviors and decisions. The World Congress on Information Technology suggests that both men and women may be projecting unconscious biases that play out in subtle, everyday interactions and institutional practices. For example, we might miss certain strengths, talents, or characteristics when someone does not fit our “schema” for what a “good leader” or a “good technical person” looks like. Likewise, we might misinterpret behaviors, like characterizing women as “too aggressive,” when the same behavior from men is often deemed more acceptable. When these biases become enculturated into company policies or practices, they can result in small but significant inequity barriers for women and minorities.

Micro-inequities
Micro-inequities — closely related to and often caused by unconscious bias — are subtle, cumulative, and repeated verbal and non-verbal negative messages that accumulate in ways that lead employees to underperform, withdraw from co-workers, and ultimately leave the workplace (Young, 2007).

Examples of micro-inequities and stereotype threats include:

- Recruiters and interviewers using the pronoun “he” when discussing a position or potential candidate.
- Enthusiastically greeting men but being more hesitant to greet women at job fair booths or recruiting functions.
- Frequently mispronouncing someone’s name.
- Consistently confusing the few people of color in the company with each other.
- Failing to recognize an idea when expressed by one employee, but acknowledging it when paraphrased by another employee (Ashcraft, et. al., 2016).

A CIO in this study gave her own experience with unintentional gender bias:

“I was the only woman representative on a major vendor advisory board. The CEO of the company didn’t think about balancing gender or diversity on the board, but when
we assembled and I was clearly the only woman among many, many men, he stated, ‘Oh no, what have we done?’”

Making gender a conscious choice, such as in the formation of committees and work-groups is an example of purposefully moving out of unconscious bias and into purposeful inclusion.

**Stereotype Threats**

Organizations with a binary mindset regarding employee talent tend to reinforce stereotypes and invoke stereotype threat (Emerson & Murphy, 2015). For example, the following conditions can trigger stereotype threat and cause highly qualified candidates to underperform or appear less “confident:”

- An all-male or all-white (or otherwise homogeneous) interview team.
- Features of the physical office environment that signify a stereotypically “geeky,” “male,” or “white” space (e.g., action figures, sci-fi posters, stacked soda cans, “geek” stuff).
- Attention called to gender or race during application, interview, or other evaluation processes.

It is important to remember that in most cases, such bias and stereotyping is not the result of discriminatory intentions. Leaders should avoid creating a blaming or shaming culture, but rather build awareness and interrupt these biases to establish new cultural norms in our organizations.

**Multinationalism and Gender Bias**

One of the CIOs in this study made pointed remarks about the difficulties of working in multi-national and multi-cultural environments where there is less respect for women. When asked how she handled these situations, “I tell vendors, don’t bring men with cultural biases against women to any meetings with me. This is the United States, not some 3rd world country.” As we embrace more diversity in our workforce, we are more likely to encounter unconscious bias on the part of both men and women who are simply bringing forth ingrained cultures into their work engagements.

**The Goldilocks Dilemma**

Every CIO in this study alluded to the idea that their success was based on their ability strike a balance between persistence and patience, tolerance with accountability, listening with telling demonstrating grit with exercising restraint. For women, the fulcrum of balance between positive and negative perceptions of their behavior is a razor-thin line referred to as the
Goldilocks Dilemma. Named for the “just right” porridge of the famed children’s story, the Goldilocks Dilemma is a double bind condition for women who struggle to not be too tough or too soft but are rarely just right. The perceptions of men and women when comparing the same agentic behaviors are very different. She’s pushy, he’s persuasive. She’s bossy, he’s a leader. She’s rude, he’s direct and to the point. She’s aggressive and hostile, he’s a go-getter. Several of the CIOs in this study cited experiencing this phenomenon on their career ascent. But some researchers and women leaders are reporting that women are now even more likely to be described by others as being assertive or dominant (Calnan, 2017).

Summary
The environment that women CIOs are navigating through today is different from the one their predecessors traversed. While we have begun to notice and measure the tremendous value of women and diversity in our IT organizations, the environment today is more complicated and at times surreptitious. Women are forcing their way into key decision circles, trying to be noticed and included, while dealing with passive-aggressive behaviors and encultured unconscious gender biases. While there are more women graduating from our higher education institutions than ever before, relatively few are choosing IT careers and very few are finding their way to leadership roles. Clearly, there is a problem that needs to be addressed by both women and men. The success of our IT organizations and institutions will depend heavily on the value and strength of diversity we bring to applying technology to solving modern education problems and reinventing what it means to be an institution of higher education. After all, our institutions serve increasingly diverse communities and arguably, the foundation of our democracy and our ability to address these diverse needs demands a diverse approach.
Sage Advice

To better understand how we might improve our situation, we look to the sage advice of the 13 CIOs interviewed in this study. Their words, stories and methods help inform both men and women, and help us identify key behaviors, avoidable obstacles, and developmental activities that help us create new culture in our organizations. The CIOs cast an arc of conversation from building self-awareness, to conscious behavior modification, to building coalitions of support, and to messaging and communication. Their experiences create talking points and departures for further engagements for leadership implications, eliminating gender bias, and creating opportunities for women in our IT organizations.

To Thy Own Self Be True

The importance of self-awareness, and “owning your definition of self” was cited by the CIOs in this study as a critical foundational step in their personal development. One CIO said, “I had to overcome my own issues with gender bias to realize that I probably could not change others.” Having a sense of your purpose, disposition, motivations, and as one CIO said, “… answering the ‘why’ question for yourself provides your motivation, a strong principled base and your moral anchor. One CIO described the importance of a sense of strong self-purpose, “Don’t let anyone stop your momentum or distract you from your purpose. For every instance of gender bias you encounter, focus more on your own development, confidence, vision and strategy.”

Choosing Your Own Garden Where you Can Grow and Bloom.

Five of the CIOs in this study talked about finding the job and organization that are a good match for your knowledge, skills and attitudes. At least one CIO recognized that it may be useless to try to change an entrenched gender biased culture and suggested that, “Women might spend more time just making sure that they're choosing work environments that they're going to be able to thrive in.” Tambellini (2016) found in her interviews with CIOs that culture of the organization matters and often trumps policy. Moreover, working with people who support you for who you are is very important. One of the CIOs in this study stated, “Find different ways, different methods to ‘get through’ - don't let yourself be defeated. Just hammering the nail harder won’t always elicit results. Maybe it's not the nail or the hammer, maybe it's the wood. Find the “soft wood” and the people who can help you nail it.”

Finding the right ‘wood’ may be about choosing the right environments and finding the right colleagues who support you, not just your title. Many of the CIOs talked about how they either had or did not have a culture of inclusion or other conditions important to the development of women. For example, organizations that demonstrate support for women typically have flexible policies for work-at-home, or flex schedules as well as accessibility to family services like
daycare or women support groups. It may be just as important to recognize and avoid toxic environments, recognizing that you have choices about where you invest yourself.

**Be Reflective but Not Overly Self-Critical**

Assessing your own biases and work-life objectives is a highly reflective process. Kramer and Harris (2016) suggested that before women can effectively cope with other people’s gender stereotypes, they need to know their own. One of the CIOs in this study commented, “It is important to have self-analysis, give pause, reflection as a way of understanding situations - hold the mirror up. Make sure we know our own biases, don’t over-attribute, beat ourselves up, or transfer responsibility.” Having a strong self-definition, building your self-esteem, and giving yourself permission to make mistakes are important, particularly for young women who are developing their sense of self.

**Being Something Your Not is Not Something You Want To Be**

Deviating from our true self can be a tempting way of imposing ourselves on others, particularly when faced with inertia of change in our organizations. But these deviations are often unsustainable and personally frustrating and therefore, ineffective in making lasting change. Several of the women CIOs in this study discussed advice they had received advice from others regarding how to appear “tough” in order to compete for the attention and respect of male counterparts in their institutions. “You have to be mean and in people’s face”, was advice that one of the respondents received.” Another stated, “I had a male boss tell me that I had to be the tough leader, sort of embrace the bully in the school yard approach. But I eventually realized that is untrue and that it was really bad advice.” Many of the CIOs in the study expressed they had learned that playing the ‘gender card’ was detrimental to their ultimate success.

Another CIO told the story of trying to overwhelm her staff with knowledge, “I felt like I had to be the subject matter expert on everything, and impress them with my knowledge and skill, you know - create some shock and awe in meetings, then drop the mic. Well that just made my staff feel stupid. Don’t do that! You just undermine your own credibility when you do. Instead, let them be the expert and listen to what they have to tell you.” Rather, the women in this study found ways to exert effective assertiveness to situations while remaining true to their own personalities, style, and dispositions.

**Turning Criticism into “Carefrontation”**

The increasing pervasiveness of technology in our institutions increases the expectations of IT stakeholders and the potential consequences of technology failure. These stakeholders can demonstrate high anxiety about technology, particularly when they don’t understand it. They
can also be very critical of IT at times casting their frustrations at anyone from the help desk to the CIO. Certainly, some interpersonal conflict is normal and even productive in our work, and hard to avoid in the complex organizations higher education CIOs operate in. A common thread among the respondents was the importance of rising above what felt personal and to keep your professional goals in focus. "It may feel personal, but it’s probably not personal", was how one CIO described her experiences in dealing with criticism.

When we do not deal well with criticism, it can lead to more confrontational situations. Instead, the CIOs in this study recognized that criticism is an opportunity to engage, educate, improve, and at times, make prudent course corrections. They were able to overcome the personal emotions of criticism, instead transforming it into “carefrontations” with stakeholders leading to positive outcomes. One of the CIOs stated, “Everybody would tell me what I was thinking was wrong, but that criticism lead to better decisions in the job.”

Another quipped, “You have to a have a tough skin, and glean what you can from criticisms - if you let them get to you, you'll end up in a puddle on the floor. Get better at what you’re doing. Don't internalize things - to allow emotional distress. Having beat myself up a lot, I realized I needed to use this to my advantage, realize I'm not a perfectionist, and not beat myself up over it.” Letting go of self-criticism is important in any leadership role. But it is equally important to recognize when criticism of your work goes over the line and truly does become something personal or attacking. It can be hard to differentiate when this line is crossed – having a mentor can be a valuable asset with assessing and forming responses to these kind of problems.

**Manage Your Emotions**

We all get emotional about situations and we draw on our emotions to make impassioned pleas and other positive uses. But being aware of your emotions and the context is important. Remember, people are watching and judging with their own unique lens. One of the CIOs in this study commented, “I wear my emotions on my sleeve. This is stereotypical, but is not unique to women, but outburst by men are acceptable, while outburst by women are perceived differently and not good.” Withdrawing, reflecting, and living to fight another day from a more rational position is a good tactic for any leader.

The women CIOs in this study learned that ‘going nuclear’ with an emotional version of their message did not help them advance. In fact, it could back-fire causing escalation and precipitous emotions and ultimately clouding rational responses that could address the problem. One respondent cited that, “Creating more drama just makes it harder for you to get your message out - that you're trying to do something good.”
Many of the CIOs discussed an alternative approach of using self-reflection as a means of understanding their own feelings, to understand what should be done, how can I improve and do better the next time. A CIO stated, “I could resist or embrace the realities. So I don’t let it get to me, and remind myself that it is all a reflection on the people exhibiting the behavior – it’s not me.” Another suggested the idea of carefully picking your battles, stating, “There’s always a next time when it comes to gender bias.”

Goldilocks Learns Assertiveness

Gauging when to weigh in or pass on a gender bias issue can be a tough decision given there’s a clear bias against assertive women in leadership positions (Calanan, 2017). Assertiveness training can provide aspiring women perspectives on how to properly state your needs and perspectives to build credibility, buy-in and followership. Properly delivered assertiveness can drive authentic relationships and avoid personal traps of frustration, resentment and reduced self-esteem. The ability to clearly articulate your desired state or outcome without attacking others is a simple formula for effective assertiveness and can be an excellent skill for managing the Goldilocks principle. One of the CIOs stated, “I often felt like I was the ‘play thing’ at the table. But now I stand up and say, I don’t think you’re hearing me, or listening to me.”

The goldilocks principle highlights the thin line between being perceived as an assertive and capable women to being viewed as an aggressive and agenda driven feminist. The CIO interviewees expressed that they learned to walk that delicate line between assertiveness and “being bitchy” as one CIO said, “I tried very hard not to ever make it about gender and was very conscious to not being that person - that feminist.” Another CIO commented that, “You have to find ways to work within the culture, assertively keeping objectives in front of everyone while being careful to not be seen as, well you know, the woman feminist.” This is probably one of the key areas where a mentor, advocate, or ally can help you gauge a response and help support your walk down this thin line of success.

Dealing with Exclusion - Sometimes you have to accept your own Invitation.

An important form of assertiveness may be inviting yourself into decision circles – both formal and informal – or even into social rings where decisions are made. The CIO’s in this study commented in several contexts about being excluded from activities that are often male rituals such as golf outings, fishing trips, and after work bar activities. As one CIO put it, “This is where a lot of work gets discussed and decisions made, and we’re not invited.” It was suggested that, although potentially awkward, it is important for women to participate in these activities in order to be influential and part of the leadership. One respondent described her experience, “I became more assertive. I joined the after-hours talk at the bars with the guys to build on our work relationship and my confidence.”
Mentors in Unlikely Places

Mentors and mentoring play an important role in the development of leaders. Participants in this study were no exception. Mentors can provide the mirror of reflection that helps us gauge our reactions, thoughts, and plans. The CIOs identified mentoring relationships as essential sounding boards and sources of alternate perspective and valuable advice. Nearly all of the CIO’s in this study had leveraged a male mentor as a key contributor to their leadership development. A CIO in this study said, “I didn’t have a mentor starting out, but as I got older and smarter, I realized the value of building trusted networks around me and these people helped me see how I needed to change through safe conversations.”

One problem is that women do not perceive that there is anyone available or capable of mentoring them, and women are less comfortable asking for help than men (Tambelinni, 2017). In reality, any relationship may have mentoring qualities to it, and you can learn from everyone. Be open to informal mentor relationships via diverse, even obscure areas within the academy or outside of IT. According to one CIO in this study, “You find true mentors in some unusual places, when you weren’t necessarily looking.”

Finding Allies and Building Your Support Network

While anyone or any situation can be a mentoring opportunity, we also rely on simpler relationships with people who help us form coalitions to move our agendas forward. The CIOs in this study frequently discussed “allies” who helped them in tactical ways to overcome bias in daily work and meetings, or otherwise work in tandem to build coalitions, identify bias-based behaviors, or just be helpful in producing a desired outcome. In many instances, these helpers were established men in positions of power who were sympathetic to women’s’ issues. One of the CIOs suggested, “Find the pieces you need from various people to gain a broad and diverse perspective on things.”

The CIO’s interviewed for this study had many stories and examples about the importance of their personal support network. More than just associations on LinkedIn™, these are face-to-face, trust-based relationships and the participants are stakeholders who are fully engaged in helping you succeed. Obtaining male perspectives and finding advocacy among male mentors and leaders was identified as a key element to the aspirational success of nearly all of the CIOs interviewed. The majority of these successful women had more male mentors and allies than female. Maybe that’s because there are more males in the IT field. Regardless, the participants discussed the importance of encouraging aspiring women to seek out male mentors early in their career. As one CIO put it, “There’s always individuals out there who will be receptive to helping you- find them.”
Support Outside of Work

Our allies often extend outside of our work environment to friends and associates who help us navigate life. The CIO’s in this study identified family and life-partners as being instrumental in their ascent to leadership roles. This support is frequently mentioned where CIOs had children in their home. Several of the CIO’s who raised children stated how important their spouse was in handling family matters. It was clear that Mr. Mom’s or family care-givers made a big difference in their ability to aspire in their role. As one CIO said, “I couldn’t have done it by myself – I’m not Wonder Woman. If you are raising or planning on raising children, it is very helpful to build support around you to help with children and other life situations.” While this is probably true of most executives in higher education regardless of gender, it seems particularly true and a point of emphasis among this group of CIOs.

Master your Messages

The CIOs in this study stated the importance of communication skills and becoming comfortable presenting and conversing in various situations. One CIO discussed how she built her confidence up over time and many opportunities:

“I was painfully shy in presentation situations. You might not believe that now, but I couldn’t do a math problem at the chalk-board in class. As a college student, I dropped every single class that required a presentation. After graduation, I went to work for a law firm and was told, I would be running a monthly meeting of partners. I nearly quit, but I was desperate for a job. So I ran this meeting every month for 3 years. It provided me with the opportunity to learn how to participate in a meeting. Later I gained enough courage to give small presentations at conferences. I started with poster sessions and then stretched myself a little each year. Some presentations were disastrous but I learned from every failure.”

Big Communication Happens in Small Places

Public speaking, while important, is not where critical communications and decision-making occurs. The CIOs discussed that most of their communication was not conducted in formal presentations. Rather, it occurred in informal issues discussions around small tables with stakeholders, colleagues and staff. One of the CIOs pointed out the need to communicate the same message, “in six different ways to 15 different people.” Another stated, “One on one and large group presentation are ‘over rated’.” As another CIO put it, “Have your elevator speeches ready at all times.”
Learn to Listen so You Can be Heard

It is an often overlooked fact that listening is the most important aspect of good communication. The CIOs discussed the importance of developing their ‘soft skills’ such as active listening, negotiating, conflict resolution, and decision-making. Similar to their male counterparts, women leaders must overcome the stereotypical Achilles’ heals of leaders – listening and patience. Several CIO’s in this study stated that listening was something that they had to learn, “Sometimes I don't slow down to think about what other people are saying. I'm thinking about what I'm going to say because I want to be heard, but I first need to hear what other people have to say.” As leaders many CIOs value timely, straight-line results and we elicit them through clear priorities and instructions. But we are better served to be inclusive of others, “tacking into the wind” as one CIO put it, in order to get others onboard and making them a part of the crew working together.

It's Your Turn to Talk, but What You Are Saying?

One respondent noted the effect of speech inflections known as “affective tags” and “softeners” on people’s perceptions. Some theorists posit that when women use tags and softeners when speaking, they are diminishing the impact of statements, and hence their authority. Tag questions are grammatical structures in which a declarative is followed by an attached interrogative clause or 'tag', such as “You were missing last week, weren't you? Lakoff (1975) posited that tag questions depicted a typical female speech style weaken messages and signal a lack of self-confidence in the speaker.

However, it should be noted that the research on gender differences in the use of linguistic tags is not fully understood (Liberman, 2004; Calnan and Davidson, 1998). While the research may be inconclusive in determining whether the use linguistic tags and softeners detracts from women’s authority in conversations as one CIO put it, “I see it all the time, women use this more than men and it is weakening our credibility around the table.”

Take a Risk, Reap the Reward

We all have different tolerances or appetites for risk. As human beings, we’re pre-programmed to recognize and evaluate risk versus potential reward. And research has shown that women take fewer risks than men (Sundheim, 2013). Learning to embrace risk may lead to opportunities for women to advance, or at least match their risk tolerance with respect to their male counterparts. The CIOs in this study routinely sought, requested, and accepted opportunities to prove themselves by taking risky assignments on high-profile projects. Many of the CIOs stated they had worked on large enterprise resource planning (ERP) systems as a way of advancing their career trajectories. These projects forced them to hone both their people and technical skills. Working on the ERP projects provided opportunity to develop all kinds of
skill sets and establish credibility, “To be part of change and innovative and work on challenging projects was critical to my career success – even small schools do big and important things.” Another CIO stated, “Most people run away from risky projects, but when the door of opportunity opens, run through it!”

Don’t Over-Scrutinize Job Descriptions

Some sources indicate that women may scrutinize a job description looking for a complete fit, whereas males apply to jobs with high confidence but where they may have much less qualifications alignment. This can actually stand in the way of taking action and stop women from taking smart risks such as speaking up, volunteering for new assignments, or even running for elected office. Women often watch male colleagues jump at opportunities, while they hold back until they believe they are perfectly qualified.

“Life doesn’t always present you with the perfect opportunity at the perfect time. Opportunities come when you least expect them, or when you’re not ready for them. Rarely are opportunities presented to you in the perfect way, in a nice little box with a yellow bow on top. Opportunities, the good ones, they’re messy and confusing and hard to recognize. They’re risky. They challenge you.”

– Susan Wojcicki, CEO YouTube

Negotiate!

Several CIOs in this study pointed out that women traditionally don’t negotiate their salaries like men do. Negotiation is an important skill, not just for obtaining the best salary. There’s evidence that suggests women are actually very good at negotiation when they choose to do it. As reported by Forbes, although women now earn, on average, 20% less than men in the same jobs, for women who have learned to negotiate, that statistic has been completely reversed. This is based on U.S. Census data showing that single women aged 22 to 30 in major metropolitan areas now earn 8% more than their male peers (Fisher, 2011). This suggests that women should gain knowledge, experience and confidence in negotiating. Doing so has both personal rewards as well as professional benefits to our IT organizations.
Leadership Implications

There are important leadership implications we can glean from these 13 accomplished women who have risen to the CIO chair. The implications of the experiences and personal advice discussed in this study suggests the need of for leadership to raise awareness of gender bias. It also suggests the need for leadership to create opportunities for addressing issues and actively supporting women. As one CIO put it, “As a woman leader, you must recognize that women are always watching women leaders. And they are paying attention to both exemplars and the non-emulators.” These observations extend to all aspects of your leadership such as how you communicate, your appearance, the decisions you make, and the culture you create. Embracing the importance and recognizing the potential influence of your leadership on aspiring women is to know that you are creating a legacy and a pathway upon which the next generation of women will rise and perhaps realize the full potential of gender equality in our institutions.

Engagement

The research has established that it is important for those in positions of power to actively and visibly support groups established for women. They observed that such support is vital not only because it strengthens individual morale, but also because it strengthens the status and influence of these groups within the organization. Leadership support includes such things as participating in groups when invited, requesting invitations to attend, providing funding, and even making sure that other men, especially top leadership, supported, attended, and interacted with these groups as well.

Giving Back and Mentoring Students

As several of the CIOs in this study identified, important influence happens at young ages, “I had a 7th grade science teacher and she was very ‘women’s lib’, and she promoted sciences to the girls in the class.” As members of the higher education community, we have many opportunities to influence young people, remove obstacles, and offer support to tackle learning and skill development. As one CIO put it, “Live it, breath it, preach it. It’s about making a plan, identify opportunities to influence, and exposing students of all ages to new opportunities to work with technology.” Or as another said, “Take a gardener’s attitude- Plant seeds- wait for them to blossom. You need to consciously identify the seeds and nurture them to fruition. Seeds of relationship, understanding, skills, behavior modifications, etc… including your own skills.” Another CIO noted that it is important to teach this generation of students that there’s less entitlement and more investment required to reach their goals stating, “Teach young people to be patient – make investments. Help them realize that they are probably not going
to be CIO of Harvard at the age of 23, but could be someday with hard work, persistence, and commitment to their ideals.”

Create Opportunities

“Women have to create opportunities for other women. I mean you have to do things like re-create the social club where men network in such a way that both women and men participate”, is how one CIO stated the importance of creating opportunities for aspiring women. The CIOs in this study also spoke about finding allies to help fund leadership coaching and specifically engage men who are willing to invest in women’s development. Also, recognize talent and put women in a position to interface with business units build confidence and credibility, in a safe and rewarding way.

Encourage the sharing of information and provide access to the leadership opportunities that are developmental for aspiring CIOs. CIOs should talk up the virtues of leadership while being honest about the challenges, and recognizing women’s struggles with gender bias. As Kyle Johnson, CIO at Chaminade University, Melissa Woo, CIO at Stony Brook, and others have pontificated that the CIO is the best job on campus (Berman, Clemmons, Johnson, McIntosh, & Woo, 2017).

Creating a Culture of Accountability

The women in this study spoke frequently about how there still exists a lack of accountability and in some cases, protectionism in our institutional cultures for inappropriate behaviors. They also felt that holding people accountable for bad behaviors was essential to changing attitudes and raising awareness and that the failure to do so has long-term negative impact on individuals and the organization. One CIO offered, “I was subjected to blatant sexual harassment but did nothing about it. Later, others came forward who had subsequently been harassed by this individual, and that had a big impact on me in terms of how I would handle that sort of thing going forward. “

Another CIO spoke of an impactful situation on her:

“I was presenting to the faculty senate on a technology issues and one of the faculty members was just railing on me. I worked hard to keep my composure while I continued but the attacks kept coming. I was getting angry and I think everyone could see he was starting to get to me. Finally, a colleague interjected saying, this is beyond collegial discourse, and you are attacking her and need to stop. After the meeting, others apologized for his behavior, but nothing was done about it. There was no accountability for his bad behavior. I suppose some of his disposition could have been a result of gender bias, but it is often hard to tell. I did a lot of self-reflecting on the
situation, examining if could I have done anything differently. Should I have stood up for myself? Should I have been the one to call his bad behavior out? It bothered me for weeks, but I finally realized that it really was not about me, and the positive thing was that I found allies in the room and forged new positive relationship outcomes out of an ugly situation.”

While “picking your battles” and “not taking it personally” may be important concepts for women’s ascension into leadership roles, being honest and forcing authenticity was often cited as the key to overcoming gender bias and moving ahead. As one CIO pointed out, “There are times when members of a community need to step in and say, it's not OK”.

Engage and Support Men who stand for her.

One conclusion the author has drawn from these interviews is that women’s issues are not solely issues for women to solve, but rather the primary responsibility of men. It’s predominately men who have raised the obstacles, men who have behaved poorly, and it is men who must remove these obstacles. There is a growing body of activism among men such as HeForShe and Red Chair among others. Nevertheless, the research suggests that there is a gap between our thinking and actions, our policy and our behaviors.

Moreover, men who stand up against gender bias may be ridiculed by other men. Our leadership imperative is to assess our own biases, examine issues in a new light, change our language, and act in new ways to support gender and other forms of diversity in our workplace. Doing so is core to our higher education mission, and a powerful enabler of serving the rapidly changing higher education space. The remainder of this paper looks at specific actions men can take to create awareness, advocacy, and environments in which women IT professionals do not just survive, but thrive.
Raising Awareness Among and Action Steps for Men

Making Women’s Issues, Issues for Men
The primary research and the perspectives of the 13 women CIOs in this study suggests that men play an important role through mentoring, as allies, and as advocates for women. There is also evidence that there may be substantial unconscious, micro-biases, or stereotype threats that are unintentionally inhibiting women’s success, retention, and career ambitions in our IT organizations. Kramer and Harris (2013) suggested that most men are unaware of or unconcerned about gender bias. Moreover, most men believe that they have no biases against women and that the organizations in which they work treat women and men equally (Handley, Brown, Moss-Racusin, & Smith (2015). Coil’s (2017) article summarizing research on why men do not believe the data on gender bias science is a sobering reminder that not everyone sees gender diversity as a problem.

Miller (1998) posited that before individuals can support a change initiative, they must first be convinced that there is something wrong with the status quo. Miller also found that the higher men’s awareness of gender bias was, the more likely they were to feel that it was important to achieve gender equality. This author’s personal experiences serves as evidence of these findings.

Ashcraft, DuBow, Eger, Blithe, and Sevier (2013) identified several key barriers to men’s support of diversity efforts including a lack of interest, awareness, clear rationale, time, consistency and leadership support. These barriers continue to pose problems even for men who are advocates. It was also determined that fear and the perception that the problem is too large discourage men from advocacy even when they theoretically support diversity efforts.

Diversity is Important, Right?
Ashcraft, et. al. (2013) found four prevalent reasons that men give for why they believe diversity is important. Three of these could be called “business-case” arguments: 1) to better reach diverse customer bases, 2) to fill talent needs, and 3) to achieve greater diversity of thought and innovation. The fourth reason for supporting diversity was the moral imperative to act fairly to all people. More than one-third of the men (38%) in their study had been convinced by moral reasons to bring more gender diversity into the field of computing and to ensure that female technical employees were equal contributors once they were there.

Men Supporting Men Supporting Women
Men who do advocate for women may require additional reinforcement and support given Lang’s (2003) findings that these men are subject to ridicule and are often lonely voices. When
men were questioned about the reasons behind their lack of involvement, some pointed to a “zero-sum mentality”, that is the notion that a gain for women could only come at a loss for men. But research has shown that creating an equal workplace makes good business sense for everyone, and that gender bias hurts men as well as women. Eliminating gender disparities will therefore benefit men, women, and organizations. Helping men understand the costs of gender bias and how they would benefit from gender equality is a first step toward making change.

Articulate the “Why”

Ashcraft (2013) found that supportive men clearly identifying and articulate the rationale for diversity throughout the organization. Articulating the rationale for increasing diversity should be explicit and transparent for reaching men with supportive views and overcoming suspicions and resistance regarding women advocacy. These researchers’ findings suggest the importance of addressing the “diversity-blind” question head-on while clearly explaining why diversity is important.

Through awareness and open dialogue, men may be able to overcome their own bias and IT leaders can improve the conditions, culture, and climate of our IT organizations to minimize unconscious bias. In turn, creating an environment that is conducive to the advancement of women in IT careers. Embracing gender bias and other forms of prejudice behaviors can lead to more productive and effective teams that positively affect our higher education institutions.

Action Steps for Men

There are numerous actions individual men can take to promote gender equity and fairness. The following ideas are based on a synthesis of primary and secondary research and informed by the thoughts and perspectives of the participants in this study. It is not an exhaustive list but provides some general areas upon which men can take action towards facilitating the advancement of women in our IT organizations:

1. **Take responsibility for learning about gender bias and take personal ownership in the issue.** Men, and in particular male CIOs, must embrace the realities of gender bias and take steps to address the issue in our organizations and institutions. Do not rely on women colleagues to educate people about gender inequality – commit to educating yourself and others.

   a. Engage the research, popular writings, colleagues and other resources to educate yourself about gender bias. Study the data from organizations like CHECS, EDUCAUSE, the National Center for Women & Information Technology, and campus-based resources that provide data and comparisons regarding diversity. Compare these to data to your own organization.
b. Identify and reflect on your own biases. It is important to explore and understand your own biases in order to lead others to greater understanding of the impact of gender bias in our lives and work.

c. Honestly, assess your own biases and identify colleagues and other male leaders who champion gender inclusion and challenge the status quo. Consider a tool like Harvard’s Gender-Career Association test at http://www.projectimplicit.net/index.html

d. Find a mentor who can help you explore your ideas and issues surrounding diversity and inclusion.

2. Discuss gender equity and bias issues with women.
Create an organizational conversation about biases and facilitate identifying steps the organization can take to address bias.

a. Talk with female colleagues with whom you already have some level of trust. If you are not sure how to begin the conversation, you can mention that you have been reading about these experiences and were wondering if she had any thoughts on these issues. If a female colleague happens to drop a casual comment about difficulties she has faced, mention that you would be interested to hear more.

b. Use active listening techniques to improve your understanding of the situations, dispositions, and experiences being described while signaling your empathy.

c. Recognize and respect that women have had different experiences, so not all of them will want to discuss their experiences at this particular time, or ever.

3. Discuss with men in your institution and organization your commitment to creating a workplace that is gender-inclusive and invite them to join you.
Being aware of and keeping individual differences in mind can help men better understand why women and other underrepresented people differ in their perceptions and beliefs around these issues. These differences also underscore the importance of listening and actively inquiring to understand where individuals currently stand on gender issues.

a. Talk with other men in your organization about gender inequity in the workplace and identify topics and issues to explore further.

b. Communicate the benefits gained from a more diverse and inclusive workplace. Frame diversity and inclusion as both a business and social issue with far-reaching benefits.

4. Extend the Conversation to the Front-Lines of the IT Organization to Build a Culture of Inclusiveness.
Clearly identifying and articulating the rationale for diversity throughout all levels of the organization. It is important to clearly explain why diversity is important. This can be done through the recent research data about how diverse organizations are more productive, or the unique perspectives, innovations, or viewpoints that women bring to the organization.

a. Provide IT staff with education and training on the topic. Awareness training is the first step to unraveling unconscious bias because it allows employees to recognize that everyone has biases and provides tools for exploring their own biases.

b. Engage your colleagues and staff in honest dialogue about what you can do to recognize and raise awareness of any open or passive aggressive discrimination, unconscious bias, or micro-inequities regarding gender in our organizations. Encourage others to “call out” situations where bias is detected.

5. **Create Diversity Focus Groups, Training, and Awareness Events.**

   Get yourself and staff involved in your organization’s gender and diversity-focused employee resource groups.

   a. Form a discussion group with women IT staff to identify current biases they experience.

   b. Engage your Human Resources office and create workshops related to micro-inequities and unconscious biases.

   c. Hold awareness events. Pairing awareness events with personal, campus-specific stories can be crucial for driving participation in workshops and create discussion that is effective and relevant for your institution. However, telling stories at public events can be risky for women and others so be sensitive to this.

6. **Examine current organizational policies and practices that may introduce bias.**

   Current policies and practices may be reinforcing gender bias or at least using language that is not gender neutral. Policies for diversity need to be supported by the other organizational structures, processes, and practices, such as strategy, leadership, and climate. Leading reviews of policies and organizational practices can reinforce a commitment to gender equity.

   a. Review policies and test that they promote work-life flexibility benefits policies. Use work-life flexibility benefits, if you have them (e.g., paternity leave, family leave, and telecommuting), to manage your work and personal responsibilities, and communicate your support for male colleagues who use these policies/benefits.
b. Review work-at-home policies to ensure equitable allowances for both men and women.

c. Reconsider leadership skills so that appointments and promotions are not just awarded for aggression when negotiation and persuasion are equally valued skills.

d. Make promotion guidelines transparent and available to ensure equal access and accountability.

e. There are numerous other areas where gender bias may be present in HR policies and office procedures. See resources such as https://www.ncwit.org/resources/supervising-box-series-full-series for additional ideas.

7. **Identify biases in your organization and make action plans to address.**
   a. Pay attention to the subtle ways in which some men may unconsciously cause women colleagues to feel diminished. Avoid these behaviors, and encourage male peers to do so as well.
   b. Be attentive to whether men and women colleagues are being judged by different standards (e.g., promotion criteria based more on potential for men and more on demonstrated achievement for women, marital/parental status being considered in personnel decisions concerning women but not men candidates).
   c. Rotate assignments or otherwise ensure that male employees work with female managers, leaders, or mentors.
   d. Sometimes, seemingly unimportant details, such as wall décor or office organization, can send the wrong message.

8. **Utilize metrics about the diversity of the organization and teams.**
   a. Track gender and racial/ethnic composition of your workforce to establishing metrics to diversify internship programs, interviews, new hires, promotions, and the composition of project teams.
   b. Review pay scales among similarly classified employees to ensure equity.

9. **Mentor or sponsor emerging or aspirational women IT staff members.**
   Mentoring and sponsoring are widely considered to be critical to helping women advance in their careers. Women IT leaders have routinely acknowledged the importance of male mentors in their professional development.
   a. Make it clear that you are willing to help support individuals on their terms.
      Encourage your male peers to do the same.
b. Create programs that help recruit young women to computer and information technology sciences and related work-study programs on campus.

10. Model leadership development of women and minorities at our institutions.
   a. Listen to women colleagues when they attribute certain work experiences to sexism without being defensive, offering alternative explanations, or otherwise invalidating what they say.
   b. Speak up if you observe gender bias at work. Speak up if you notice gender-based assumptions being made about your colleagues’ needs, work interests, and competencies (e.g., she will not want to relocate because she has a small child; he does not need work-life flexibility; she does not really want to be on the fast track).
   c. Do not condone, laugh at, or tell sexist, racist, or homophobic jokes or stories.
   d. Do not interrupt women when they speak, control their space, or assume they need your protection.
   e. Focus on the effect of your actions, rather than on the intent.

11. Actively recruit women to IT.
    Attracting women and other under-represented populations to your organization is accomplished through the development of clear strategy and purpose. You cannot rely on serendipity nor can you give up on the ideals of creating a diverse workforce regardless of demographics or present culture. Change occurs one person at a time.
    a. Review job descriptions and advertisements. Edit job descriptions for gender bias to avoid discouraging women from applying for positions. Avoid masculine language, including adjectives like “competitive” and “determined,” results in women “perceiving that they would not belong in the work environment.” On the other hand, words like “collaborative” and “cooperative,” tend to draw more women than men.
    b. Promote your organization as one that supports gender equity.
    c. Promote examples of all forms of diversity when creating recruitment statements, job advertisements and in other talent management strategies.
    d. Raise awareness of hiring committees about how biases in the selection process. Consider removing names and demographic information from candidate review materials.
       i. Ensure that the focus is on a candidate’s specific qualifications and talents, not surface “demographic characteristics.” A blind, systematic process for reviewing applications and resumes will facilitate selection of the most relevant candidates.
ii. Standardize the interview process whereby each candidate is asked the same set of defined questions. Use an interview scorecard that grades candidates’ responses to each question on a predetermined scale.

iii. Minimize bias by focusing on the factors that have a direct impact on performance.

iv. Somewhat contrary to ii above, balance candidate talent qualifications with the idea of hiring the right person for the organization. Sometimes “fit” is most important to the broader organization, especially when specific skills that can be learned later. If “fit” is important, rate candidates as you would on their other skills during the interview by giving likeability or fit a score.

e. Develop on-boarding opportunities. Remove any gender bias language from onboarding materials and ensure that employees’ early experiences with the company are rewarding so that they want to remain a part of the organization.

12. **Share your success story.**

Share your stories of working for inclusion with other men – both the good and the bad. It is just as important to share your failures, as it is to share your successes so that everyone can learn from the experience.

a. Identify and meet with other like-minded individuals in the organization, and brainstorm ideas for making the case and gaining this kind of support.

b. Identify one or two likely advocates at the senior level whom you might approach to get their support initially.


13. **Listen, believe, and be accountable to women and their stories.**

Women often have experiences that shape their lives differently. They also face different forms of prejudice and inequities. In this context, it is important to understand the differences in equality and equity. Equality is about sameness and promoting fairness and justice by giving everyone the same thing. Equity is about fairness, and making sure people get access to the same opportunities. Sometimes our differences can create barriers to participation so we must first ensure equity before we can realize equality. Hence, “Treating everyone the same” ignores seemingly subtle but significantly different perceptions of “fairness”.

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a. Be present and engage in discussion and focus groups. Welcome the opportunity to meet with staff members who may be experiencing or witnessing bias.
b. Develop and review off-boarding comment opportunities to allow women to point out cultural problems, experiences, and bias they encountered. What could have been done to retain this person on the staff or in the field of IT?
c. Be cognizant of the differences in equality and equity to help you understand stories.
d. When confronted about your own sexism (or racism, homophobia, etc.) or lack of understanding, listen instead of getting defensive.

14. GOTO 1

Figure 1: Model Action Steps for Men Supporting Men Supporting Women

ACTION STEPS FOR MEN FOR ADDRESSING GENDER BIAS
Conclusion

Women continue to face significant obstacles and gender bias as they pursue their careers in IT as evidenced by current research and news reports of misogyny. Many women discontinue their pursuit of leadership roles, perhaps due to the challenges of the biased environments they must navigate. The women CIOs interviewed in this study identified hardships that are inherent to the ascension of IT leadership roles, and those unique to women. These extraordinarily accomplished CIO’s were able to overcome gender biases through practiced self-reflection, calculated restraint, advanced education, excellent communication skills, and help from support networks.

It is incumbent upon current IT leadership to remove these hurdles and create environments where women are fairly recruited, compensated, developed, and retained equally with their male counterparts in our IT organizations. Organizational leaders must engage bias issues deeper in their organizations and create cultures that equally favors and celebrates gender diversity. In particular, leaders should find opportunities for women to demonstrate their potential and provide a safe environment for them to step forward and contribute. CIOs should also develop and recognize qualities beyond technical expertise that may be signs of future leadership potential in women.

The current lack of diversity among students in STEM education fields indicates the need for programs that provide on the job training rather than reliance on specific degree requirements. Providing a pathway from general support positions to increasingly technical or management specific job tracks will enhance diversity and retention. Higher Education CIOs have an advantage in implementing inclusive approaches given their position, authority, and close association with all areas of the academy. Enabling cultural change requires leadership to create specific, measurable plans for improving diversity.

CIOs must be exemplars and leaders who take responsibility for recognizing and changing their own conscious and unconscious gender biases. Leaders must recognize that men must play an active and influential role. These leaders must explicitly encourage and support men to engage in culture-changing action steps to eliminate gender bias and actively support women in our IT organizations. As one of the CIOs in this study said, “Both men and women must become better advocates for women earlier in ours and in their careers.”
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Resources

University of Arizona Center for Research on Equity and Opportunity
Seeks to actively advance the research and scientific reputation of the University of Arizona by promoting faculty diversity and the equitable treatment of faculty. Interview Tool Kit
http://ssom.luc.edu/media/stritchschoolofmedicine/diversity/documents/interviewtoolkit.pdf

National Center for Women & Information Technology
The National Center for Women & Information Technology (NCWIT) is the only national non-profit focused on women’s participation in computing across the entire ecosystem, helping nearly 900 organizations recruit, retain, and advance women from K-12 and higher education through industry and entrepreneurial careers by providing support, evidence, and action. https://www.ncwit.org/resources

CODE
A global non-profit organization with programs aimed at inspiring women to excel in technology careers. www.womenwhocode.com

Gender Bias Learning Project
A zany brainy look at a serious subject.
Gender Bias Bingo http://www.genderbiasbingo.com/

HeForShe
The HeForShe solidarity movement was created by UN Women to provide a systematic approach and targeted platform where a global audience can engage and become change agents for the achievement of gender equality in our lifetime. http://www.heforshe.org/en

Bern Sex Role Inventory test
The results show the relative strength of your communal and agentic traits. at http://garote.bdmonkeys.net/bsri.html

Supervising-in-a-Box
NCWIT’s series available at http://ncwit.org/resources/unconscious-bias-video

Men Advocating Real Change (MARC)
MARC is a community for men committed to achieving gender equality in the workplace. The MARC website serves as a forum in which its members can engage in candid conversations about the role of gender in the workplace. It also showcases member-generated advice, insights, and best practices to inspire men who wish to expand gender diversity within their organizations. http://onthemarc.org/home
The Project Implicit Association Test (IAT)
Project Implicit is a non-profit organization and international collaborative network of researchers investigating implicit social cognition - thoughts and feelings outside of conscious awareness and control. Project Implicit is the product of a team of scientists whose research produced new ways of understanding attitudes, stereotypes and other hidden biases that influence perception, judgment, and action. [http://www.projectimplicit.net/index.html](http://www.projectimplicit.net/index.html).
Harvard University’s Project Implicit webpage at [https://implicit.harvard.edu/implicit/](https://implicit.harvard.edu/implicit/)

National Organization for Men Against Sexism (NOMAS)
The National Organization for Men Against Sexism is an activist organization of men and women supporting positive changes for men. NOMAS advocates a perspective that is pro-feminist, gay affirmative, anti-racist, dedicated to enhancing men's lives, and committed to justice on a broad range of social issues including class, age, religion, and physical abilities. [http://nomas.org/](http://nomas.org/)

Sit With Me
Sit With Me was created by members of the National Center for Women & Information Technology, a non-profit coalition that works to increase the meaningful participation of girls and women in computing fields and careers. By sitting together, we hold a space for an honest conversation regarding the future of women in information technology (IT). [https://www.sitwithme.org/](https://www.sitwithme.org/)

Twitter
- Women in Technology Issues.
- Women in Technology
  [https://twitter.com/search?q=%40womenintech&src=typd&lang=en](https://twitter.com/search?q=%40womenintech&src=typd&lang=en)
- Girls in Tech @GirlsinTech
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- Women in Technology
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- Sit With Me
  [https://twitter.com/SitWithMe?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%5Eserp%5Eurl%5Eauthor](https://twitter.com/SitWithMe?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%5Eserp%5Eurl%5Eauthor)

Oxfam’s Gender Equality and Men (GEM)
The GEM project began in 2002 to assist Oxfam in exploring ways to advance gender equality and poverty reduction by incorporating men and boys more fully into its work on gender. The project included an internal advocacy component, designed to encourage men inside the

Internet 2

EDUCAUSE
The Women in IT Constituent Group collects and disseminates effective practices in the recruitment, retention, and advancement of women in higher education IT.
[https://www.educause.edu/discuss/women-in-it-constituent-group](https://www.educause.edu/discuss/women-in-it-constituent-group)

The Glasshammer.com
Theglasshammer.com helps individuals to build their career via advice, networking events and coaching. [http://theglasshammer.com/](http://theglasshammer.com/)

Women in Engineering Proactive Network
To propel higher education to increase the number and advance the prominence of diverse communities of women in engineering. [www.wepan.org](http://www.wepan.org)

Million Women Mentors
To support the engagement of two million science technology, engineering and math (STEM) mentors (male and female) to increase the interest and confidence of girls and young women to persist and succeed in STEM program and careers by 2020. [www.millionwomenmentors.org](http://www.millionwomenmentors.org)

American Association of University Women
AAUW has been empowering women as individuals and as a community since 1881. For more than 130 years, we have worked together as a national grassroots organization to improve the lives of millions of women and their families. [https://ww2.aauw.org](https://ww2.aauw.org)

Scientista
The Scientista Foundation is a national organization that empowers pre-professional women in science, technology, engineering and math (STEM) through content, communities, and conferences. [http://www.scientistafoundation.com](http://www.scientistafoundation.com)

Association for Women in Science
AWIS promotes women leaders in STEM by driving systemic change through research, advocacy, and career-focused initiatives. [www.awis.org](http://www.awis.org)
**Women in Technology**

WIT has the sole aim of advancing women in technology – from the classroom to the boardroom. WIT meets its vision through a variety of leadership development, technology education, networking and mentoring opportunities for women at all levels of their career.

[www.mywit.org](http://www.mywit.org)

**Events**

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<td>Information technology senior management Forum</td>
<td><a href="http://www.itsmfonline.org">www.itsmfonline.org</a></td>
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<td>Gartner Symposium/ITxpo</td>
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About the Author

Steven Burrell, EdD, is vice president and chief information officer at Northern Arizona University. He has 35 years of higher education technology leadership experience. Dr. Burrell began his career at Colorado State University and held the top IT leadership position at Hutchinson Community College (Kansas), Plymouth State University (New Hampshire), Saint Leo University (Florida), and Georgia Southern University. Burrell is a lifelong learner, earning a bachelor’s of science degree in Computer Science from Sterling College (Kansas), a master’s of education degree in Technology Administration from Plymouth State University, an education specialist degree in Leadership from Georgia Southern University, and a doctor of Education of Higher Education Leadership from Georgia Southern University. He is also a graduate of the Harvard University College of Education Institute for Educational Management. His research interests are in the humanizing aspects of technology and leadership development and is currently conducting qualitative research of gender bias as barriers to aspiring women IT leaders. In his career, Burrell has lead a wide variety of successful projects and services, including worldwide education initiatives; national competitive grants to improve integrated planning and advising for student success; state-wide multi-institution shared services; innovations in teaching, discovery, research, and performance capabilities; and state-wide infrastructure development, among many others. Burrell’s passion for technology and higher learning has created opportunities for fostering future generations of college graduates, responsible digital citizens, and community leaders. Students under his mentorship have produced Emmy Award-winning programming and have created cutting-edge technology business enterprises. He is passionate about creating future leaders and fostering the next generation of CIOs and education leaders. Burrell is also active in his profession, having served on national, state, and local technology, research, and government and in advisory roles to private business and education organizations. He is also active in his community, having served as the board chair and president of the Rotary International club, Ogeechee Hospice, and other organizations acting on behalf of animal rights and rescue. He currently serves on the Board for The Center for Higher Education CIO Studies, the Sun Corridor Network, and the Second Chance Center for Animals.