

## Why So Few? | African American Women in STEM: Part I

### Consider this. . .

On March 13th, Facebook COO Sheryl Sandberg created national buzz with the release and PR blitz in support of her book *Lean In: Women, Work and the Will to Lead*. The Harvard MBA graduate and hand-picked protege of former U.S. Secretary of the Treasury Lawrence Summers (also a Harvard alumnus) appeared on "60 Minutes," "Good Morning America," the cover of *Time* magazine and a host of other news outlets.

Poised, confident and almost deceptively affable, Sandberg argued that in addition to institutionalized structural barriers, women are, perhaps, hindered by their own attitudes and behaviors in the struggle for career equality and equity. We don't ask for what we want, we don't aspire to be at the top, and when we do, we easily compromise our goals in support of the aspirations of (male) partners or obligations in the home. In short, we pull back when "we should be leaning in." [i]

It was a different argument to an age-old debate. Well, not really. The message had been voiced before, by 1970's women's rights activists who embraced the philosophy of ask for, if not, demand what you want and organize and strategize for change. Fast forward 40 years into a new century, the difference this time lay in *who* was delivering the message.

It wasn't radical feminists, frequently depicted as angry male-bashers. Nor was it well-meaning, albeit privileged-men-at-the-top whose positions rendered them disconnected from the reality of what it means to be female and ambitious in a male-dominated environment. This time, it was a senior [white female] executive who occupied the ranks of a \$66 billion global tech company. Sandberg questioned why only 21 of the nation's Fortune 500 CEOs are women and asked us to consider the possibility of self-inflicted internal barriers to power and corporate leadership roles!

### Now consider this. . .

On March 17th, *CNN.com* published "Black, Female, and a Silicon Valley 'trade secret.'"[ii] Released following a year-long legal battle to gain access to the diversity data on 20 large and small tech companies, the web article exposed the virtual invisibility of African Americans and other people-of-color in decision-making management positions in Silicon Valley -- the modern day mecca of U.S. technological innovation and the birthplace of a disproportionate percentage of contemporary wealth. *CNNMoney*, in fact, had to petition the Equal Employment and Opportunity Commission (EEOC) and the U.S. Department of Labor in an attempt to get the 20 companies to release the data. Only eight companies complied. The others refused (Sandberg's Facebook included), describing release of the data as an issue of "trade secret" and to do so would cause "competitive harm." [iii]

After the dust settled, Julianne Pepitone, the article's author, revealed what people suspected and what government data had been illustrating for decades: "Ethnic minorities and women are generally underrepresented, sometimes severely so -- particularly in management roles. White and Asian males often dominate their fields."

But unlike the Sandberg blitz, the Pepitone piece did not gain significant public attention or media traction. In fact, if the number of reader comments (zero) and the piece's one-day lifespan on the money section of CNN's homepage is any indicator, the short-lived article barely rose to a whisper.

### Analyzing It All. . .

Media attention notwithstanding, both Sandberg and Pepitone tackled a similar subject -- diversity, access and inclusion in the corporate arena generally and in the high-stakes technology industry more specifically. One examined the issue from a perspective primarily focused on gender, while the other attempted to inject the subject of race more pointedly into her analysis. To be fair, Sandberg was not silent on the issue of race. She simply did not make it a significant focus of her discussion, noting only that "the [corporate leadership] gap is even worse for

women of color, who hold just 4 percent of top corporate jobs, 3 percent of board seats and 5 percent of congressional seats." [iv]

Pepitone attempted to examine the issue more substantively, but, for the most part, was stonewalled. At the end of the day, her analysis was based on the little she was able to uncover, leading her to surmise that contrary to public perceptions of openness, diversity *is* an issue in Silicon Valley and "people tend to hire people like themselves, and in tech, that's largely white and Asian males." [v]

Whether you agree or disagree with either viewpoint is a decision I encourage you to develop after reading Sandberg's book and Pepitone's article. My goal is to contextualize the issue of diversity, access and inclusion in order to bring greater attention to a core demographic that always seems to get lost in the discussion -- African American women, their presence and participation in the sciences, technology, engineering and mathematics (otherwise referred to as STEM), and the lingering question of why so few? [vi]

Sources:

[i] Sheryl Sandberg. *Lean In: Women, Work, and the Will to Lead*. New York: Alfred A. Knopf, 2013

[ii] Julianne Pepitone. "Black, female, and a Silicon Valley 'trade secret,'" *CNN.com*. Available at [http://cnnmoney.mobi/primary/article?url=http://money.cnn.com/mobile/json/2013/03/17/technology/diversity-silicon-valley.json&cookieFlag=COOKIE\\_SET](http://cnnmoney.mobi/primary/article?url=http://money.cnn.com/mobile/json/2013/03/17/technology/diversity-silicon-valley.json&cookieFlag=COOKIE_SET) Accessed: 20 March 2013

[iii] Julianne Pepitone. "Black, female, and a Silicon Valley 'trade secret,'" *CNN.com*. Available at [http://cnnmoney.mobi/primary/article?url=http://money.cnn.com/mobile/json/2013/03/17/technology/diversity-silicon-valley.json&cookieFlag=COOKIE\\_SET](http://cnnmoney.mobi/primary/article?url=http://money.cnn.com/mobile/json/2013/03/17/technology/diversity-silicon-valley.json&cookieFlag=COOKIE_SET) Accessed: 20 March 2013

[iv] Sheryl Sandberg. *Lean In: Women, Work, and the Will to Lead*. New York: Alfred A. Knopf, 2013

[v] Sheryl Sandberg. *Lean In: Women, Work, and the Will to Lead*. New York: Alfred A. Knopf, 2013

[vi] Alice S. Rossi. "Women in Science: Why so Few?", *Science*, 148 (1965), 1196-1201.

## Why So Few? African American Women in STEM - Part II: By the Numbers

### ***By the Numbers***

Part I of this series asked that you consider Facebook COO Sheryl Sandberg's call for women to "lean in" as individual and collective advocates and architects in pursuit of career goals. [1] But what does the call to "lean in" mean when compared against the proposition of being African-American, female and a decision-making leader in the technology sector specifically and STEM fields more broadly? Contrary to often-heard pronouncements about the critical need to vamp up national efforts to produce and support science and engineering talent, investigative research by *CNN.com* exposed the virtual invisibility of African Americans and other people-of-color in decision-making management positions in tech-rich regions such as Silicon Valley. [2]

*Diversity, access, equity and inclusion* are and remain issues which impede progress. But after more than 40 years of civil rights activism and feminist mobilization, there has to have been some measure of substantive growth when it comes to determining who gets to participate in science and in defining the nature of that participation – right? Well, let's examine some recent available data.

According to the National Science Foundation (NSF), African American women and girls comprise a little more than 6% (N=19,730,247) of the total U.S. population, 14% (N=861,642) of female students enrolled at four-year institutions, and 10.4% (N=19,160) of female graduate enrollment in STEM fields. [3] When we dissect the data to focus on degree attainment and professional career, here is what the numbers illustrate:

### **The STEM 'Pipeline'**

Encouragingly, the numbers of women in general and African American women in particular have shown steady increases in college enrollment and undergraduate degree attainment over the past decade. The gap, however, is widened at the doctoral level and in career fields. As the data shows, African American women earn 10.7% of Bachelor's and 13% of Master's degrees conferred on women in STEM but dip to less than 1% of the pool at the doctoral level.

While the 10.7% figure for Bachelor's degree and 13% for Master's is encouraging, the percentages obscure some fields (such as mathematics), where African American female degree attainment is 800% less than degree-attainment levels for white females! Similarly, graduate school (and the subsequent advanced degree) is critical in preparing scientists to engage in high-level research and development, but also in forming professional networks. These networks may not only help to open doors for careers in industry (such as those in Silicon Valley), but for opening doors to careers across all sectors.

Equally alarming is the unacceptably low percentage of African American women who comprise the ranks of employed scientists and engineers. While the nation is graduating 35,000 Black female scientists and engineers at the undergraduate and graduate levels per year, these women make up less than 1% of S&E professionals – management and non-management alike!

### **Why So Few?**

Most often, scholars, industry professionals and the public make reference to a "pipeline" when describing the flow of students in and out of programs and careers in science – a metaphor that was developed during the science boosterism of the 1980's. The metaphor, while visual and popular, is problematic as a framework for analysis. When one thinks of a pipeline, the focus is on what goes in and what comes out. However, simply looking at entry and exit numbers obscures other factors that are fundamental to our understanding of who gets to participate in science.

Colleges and universities are generally viewed as the gateway (or what historian Margaret Rossiter describe as the "entering wedge"<sup>[4]</sup>) to professional careers and social and economic advancement. For African Americans, long denied access, education has been particularly important. An understanding of "why so few" African American women earning (advanced) degrees in STEM and working in S&E cannot be fully appreciated without understanding the history of Black women in higher education and efforts to create access to science programs.

### **References:**

[1] Sheryl Sandberg. *Lean In: Women, Work, and the Will to Lead*. New York: Alfred A. Knopf, 2013

[2] Julianne Pepitone. "Black, female, and a Silicon Valley 'trade secret,'" *CNN.com*. Available at [http://cnnmoney.mobi/primary/article?url=http://money.cnn.com/mobile/json/2013/03/17/technology/diversity-silicon-valley.json&cookieFlag=COOKIE\\_SET](http://cnnmoney.mobi/primary/article?url=http://money.cnn.com/mobile/json/2013/03/17/technology/diversity-silicon-valley.json&cookieFlag=COOKIE_SET) Accessed: 20 March 2013

[3] National Science Foundation, National Center for Science and Engineering Statistics. 2013. *Women, Minorities, and Persons with Disabilities in Science and Engineering: 2013*. Special Report NSF 13-304. Arlington, VA. Available at <http://www.nsf.gov/statistics/wmpd/>. Accessed: 20 March 2013

[4] Margaret W. Rossiter. *Women Scientists in America: Before Affirmative Action, 1940-1972*. Baltimore and London: Johns Hopkins University Press, 1995