

Memorandum  
New Jersey City University

TO: Dr. Shamburg, Education Technology Leadership Professor

FROM: Aminata E. Adewumi, Faculty

DATE: August 17<sup>th</sup>, 2017

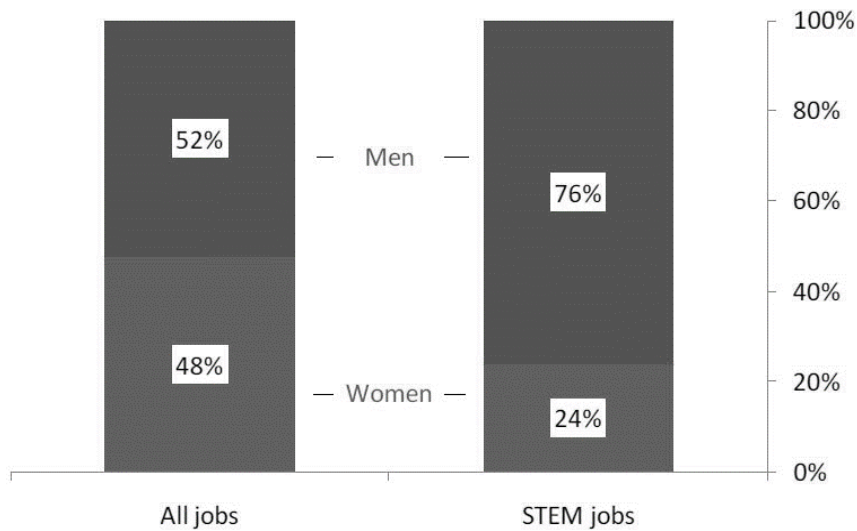
SUBJECT: The Need for Women in STEM Fields

During our general meeting on March 3<sup>rd</sup> 2017, the graduate office reported that minorities and women were underrepresented in Science, Technology, Engineering, and Mathematics (STEM) fields. There is an enormous need for women graduates in the STEM fields, especially in our Educational Technology department. However, many women and minorities students choose other fields instead of STEM majors as they enter college. Choosing a STEM major is mostly influenced by high school science and math accomplishment, academic collaboration, possible opportunities, and financial aid availability. The purpose of the report is to understand women's disparity in STEM, to acknowledge the importance of having more women in STEM, and to improve enrollment figure.

According to the Beede *et al.* (2011), women's employment in STEM has reduced since the 1990's because women consist of 48 percent of the U.S. workforce but only 24 percent of STEM workers in 2009 (see Figure 1 and Table 1). Similarly, the US Census Bureau (2013) and Landivar (2013) also report that there was 27 percent of STEM workers in 2011. There are numerous reasons that contribute to women's gap in STEM, such as gender differences, educational achievement, and social stereotypes (Diekmann *et al.*, 2010). Beede *et al.* (2011) reports that men are more likely to have a STEM career than women based on their educational achievement. Furthermore, not enough women pursue their master and doctorate degrees in STEM and non-STEM. Another factor is that women earn less than men (Beede *et al.*, 2011; Landivar, 2013; Szelényi *et al.*, 2013; Fox *et al.*, 2009, and Kahveci *et al.*, 2008, & US Census Bureau, 2013). Beede *et al.* (2011) reports a 14 percent gender wage gap for STEM careers and 21 percent gap for non-STEM careers.

Szelényi *et al.* (2013), Fox *et al.* (2009), and Kahveci *et al.* (2008) report that higher education organizations such as our Technology department at New Jersey City University can implement different programs and interventions to support women in STEM fields. Interventions such as mentoring, workshops, researches, and early start programs can motivate and encourage more women to be in the STEM fields. Such programs can improve the enrollment in our school and allow students to connect with faculty, mentors, and peer leaders. Also, students will learn about technology research and development, and the importance of team work. Overall, our purpose is to improve on the enrollment by inspiring more women and minorities to pursue a higher education and career in STEM.

Thank you for your cooperation. If you have any questions, please contact me at +555-555-5555.

**Figure 1. Gender Shares of Total and STEM Jobs, 2009**

*Figure 1. Gender shares of all careers and STEM careers; estimates are for employed persons age 16 and over. Adapted from “Women in STEM: A gender gap to innovation” by D. Beede, T. Julian, D. Langdon, G. McKittrick, B. Khan, & M. Doms, 2011, U.S. Department of Commerce, Economics and Statistics Administration. Copyright 2009 by U.S. Census Bureau*

**Table 1**

*Total and STEM Employment by Gender and Educational Achievement, 2000 and 2009*

(Thousands of workers)

	Male		Female		Percent Female	
	2000	2009	2000	2009	2000	2009
All Workers	69,098	73,580	60,619	67,058	47%	48%
College-educated	18,995	22,167	16,415	21,433	46%	49%
STEM Workers	5,321	5,640	1,680	1,790	24%	24%
College-educated	3,259	3,738	1,002	1,199	24%	24%

*Note.* Total of U.S. workforce and STEM employment by gender and educational accomplishment; estimates are for employed persons age 16 and over. Adapted from “Women in STEM: A gender gap to innovation” by D. Beede, T. Julian, D. Langdon, G. McKittrick, B. Khan, & M. Doms, 2011, U.S. Department of Commerce, Economics and Statistics Administration. Copyright 2009 by U.S. Census Bureau

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