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Gender of Students and Graduates from a USA HBCU School of Engineering

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Our university is an Historic Black College and University (HBCU), one of only fourteen HBCU's with ABET accredited School of Engineering programs (Civil Engineering, Computer Engineering, Telecommunications Engineering and Computer Science) in the USA. This relatively new School of Engineering awarded the first engineering degrees in May 2005. The School of Engineering has produced over 270 B.S. graduates and 150 M.S. graduates from 2005 thru May 2011.

This paper examines the gender composition of our student body at JSU School of Engineering from various aspects including female total enrollment, female freshman enrollment, percentage of BS awarded to females and compares to data for all HBCU's and all US engineering programs. Female engineering percent of enrollment nationwide increased about 1.3% from 2005 to 2011 while it decreased significantly at HBCU's (about 2.7%) and at JSU (about 8.2%). Freshmen female percent of engineering enrollment increased about 2.2% nationally while it decreased 3.7% at HBCUs and 12.5% at JSU. The percent of engineering BS degrees awarded to female decreased about 1.1% nationwide, about 5.7% at HBCU's and about 9.2% at JSU. [1] In terms of absolute engineering enrollment, freshman enrollment and BS degrees awarded at JSU, all increased from 2004-05 through the 2011-2012 academic year. The male enrollment, freshmen enrollment and BS degrees awarded all increased substantially more than female characteristics at JSU.

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These observations created sufficient concern leading to further detailed analyses of the trends in mathematics preparedness (ACT math scores) of our female first time freshman, female retention rates and female graduation rates relative to their male counterparts. From 2001 to 2011, female and male first time freshmen average ACT math scores shows a very large increase and should have a positive effect on future graduation rates if average ACT scores for first time freshmen continue to increase as indicated by this ten year trend. We detect no discernable difference in retention rates for female and male school of engineering students. Analysis on graduation rate indicates that female students' graduation rates are equal or slightly higher than their male counter parts, while being highly correlated with ACT math scores. JSU School of Engineering has decided embark on an aggressive plan to be finalized in a participatory manner to enhance the present of female first time freshmen, percent of female transfer students, percent of female graduates. Strategies includes visits to metropolitan Jackson area (and surrounding counties) high schools by female alumni and student for recruiting, Summer Enhancement Program for incoming freshman focusing on math and expanding our evening engineering classes, on-line classes and partnerships with local Community Colleges taught by female faculties. ■

REFERENCES

[1] American Society for Engineering Education Engineering Data Management System, <http://edms.asee.org/>