2018

Infographic: Institutional Barriers to Black and Latino Male Collegians’ Success in Engineering and Related STEM Fields

Leroy L. Long III  
*Embry-Riddle Aeronautical University - Daytona Beach, longl2@erau.edu*

William Wanyagah  
*Embry-Riddle Aeronautical University, wanyagaw@my.erau.edu*

Follow this and additional works at: [https://commons.erau.edu/publication](https://commons.erau.edu/publication)

Part of the [Engineering Education Commons](https://commons.erau.edu/publication), [Higher Education Commons](https://commons.erau.edu/publication), and the [Science and Mathematics Education Commons](https://commons.erau.edu/publication)

Scholarly Commons Citation


This Infographic is brought to you for free and open access by Scholarly Commons. It has been accepted for inclusion in Publications by an authorized administrator of Scholarly Commons. For more information, please contact [commons@erau.edu](mailto:commons@erau.edu).
Inadequate academic advising
Limited course offerings
Poor quality teaching
Insufficient financial aid

**Student quotes**

"So, as far as her advising me, I don’t think she did a great job because she would allow me to sign up for classes that I wasn’t necessarily, I wouldn’t say prepared for, but didn’t have the requirements.”
Charles, a ‘Black’ senior aerospace engineering major

"I had to take calculus first time here so learning derivatives and all that stuff on a quarter system was a bit difficult.”
Homer, a ‘Black’ senior electrical engineering major

"There is a difference just going, giving lectures, and giving you theory, there is a difference between that and actually applying that theory to solve problems.”
Carlos, a Latina and senior math major

"A lot of people split their junior year but I didn’t have money to split junior year and go a fifth year. I wouldn’t, junior year was the biggest challenge because I had to stack all of those core classes on top of each other.”
Charles, a ‘Black’ senior aerospace engineering major

**Recommendations**

1. Add metrics to the tenure and promotion process for faculty mentoring of Black and Latino students so that more faculty help with academic advising in engineering and related STEM majors

2. Consider offering more transparent and diverse options for students to transfer and hours from other institutions like community colleges or online programs

3. Change engineering and STEM graduate programs so students have mandatory education classes involving pedagogy and students gain experience teaching with a faculty member who has a record of high-quality teaching

4. Create endowments and scholarships for students from historically underrepresented racial/ethnic groups who have unmet financial needs as well as provide financial incentives for more students to work with faculty on research projects, curriculum updates, and outreach projects in engineering and related STEM fields

**Citation**