

## **UHD Promoting Improved STEM Student Success Through Math Modeling Using Applied and Visualization Techniques Across Math/Statistics/Natural Sciences/Computer Sciences**

### **The UHD Promoting Student Success in Math Across Math/Statistics/Natural**

**Sciences/Computer Sciences** project aims to use collaboration across disciplines, applied technologies, and visualization data tools key to the four-year college experience primarily for first-time-in-college (FTIC) freshman undergraduates majoring in science, technology, engineering and mathematics (STEM). The project also aims to build long-term capacity at UHD (an HSI and MSI institution) to support barrier course performance across first, second, and third year retention/persistence rates for underrepresented students, in particular targeting females thereby leading to increases in four-year and six-year graduation rates across STEM disciplines. Historically, STEM majors, particularly minorities and females, have demonstrated barriers upon entering STEM education, such as difficult transitions into the rigors of university study, low levels of assimilation associated with non-completion, costs of education and easily accessible academic/discipline support, and ease/comfort in building relationships early in their collegiate career (Kuh, 2008, 2010). By using curricular and co-curricular approaches of student support, the project addresses barriers through support strategies: 1) Increased access through **summer bridge research** mentored research programs; 2) **Accelerating math reviews and bypass exams (Revved UP)**; 3) Freshman **STARTUP** pre-entrance community building among STEM FTIC; 4) **Faculty/Peer mentoring system** within small learning community based on discipline (DOED Clearinghouse What Works); 5) prolonged **Academic Skill Self Surveillance**; 5) **Expert/Near Peer/Peer Mentoring**; 6) **Peer-led Team-Learning training toward leadership**; 7) Women/Men in STEM role-modeling presentations and (8) **Teacher/Parent Workshops** as a based for increased, **in-house recruitment**.