

Rachel Hegab is currently a senior majoring in Biomedical Engineering at Louisiana Tech University. In May 2019, she will graduate with a Bachelor's of Science in Biomedical Engineering with a focus in biomaterials. In addition to the Grand Challenge Scholars Program, Rachel is involved in a number of professional and student organizations including Delta Delta Delta Fraternity, Engineering Science Association (ESA), Biomedical Engineering Society (BMES), and Tau Beta Pi Honors Society. Through Delta Delta Delta Fraternity, she has had the opportunity to raise awareness of childhood cancer through local fundraisers, letter campaigns, and St. Jude's marathon weekend. Additionally, through her leadership position as the ESA Outreach Officer, she stimulated children's interest in S.T.E.M. fields through managing a hands on science booth at the local farmers' market and putting on a Christmas carnival filled with S.T.E.M. activities at the local Boys and Girls Club.

Starting with the summer after freshman year, Rachel participated in two different research experiences for undergraduates at the University of Texas at Austin and Cornell University and most recently worked as a biomedical engineering intern at Medtronic. At UT Austin, she investigated how the stiffness of the cell micro environment affects breast cancer cells' sensitivity to the chemotherapeutic drug, Doxorubicin. At Cornell, she designed and optimized a bioreactor system for the investigation of how hemodynamic forces affect cardiac tissue development. At Medtronic, she contributed to the development of a medical device to treat lung cancer through conducting research to evaluate the therapeutic window of a chemotherapeutic drug. This year, Rachel will continue the internship work for Medtronic through her senior design project which is being sponsored by Medtronic. In addition to her summer research experiences, Rachel works during the academic year in a research lab at Louisiana Tech University investigating the synthesis of environmentally responsive biomaterials for drug delivery and tissue scaffolds. These research experiences, internship, and senior design project contribute to Rachel's ultimate career goal of innovating better medicines. To continue this pursuit, after graduation in the spring, Rachel plans on attending graduate school for a doctoral degree in biomedical engineering.