Jeffery White
Campus: Baylor University Medical Center, Dallas, TX
Research Area: Acute Lymphoblastic Leukemia oncology and cytogenetics novel therapies
Mentor: Carlos A. Tirado, Ph.D.

Jeffery White is medical student from the Class 2025 at Texas A&M University School of Medicine who is writing a review article on a project that proposes a new approach to use novel targets for B-cell acute lymphoblastic leukemia (B-ALL) immunotherapies. B-ALL, the most prevalent cancer among children, has seen much improvement in treatment using chimeric antigen receptors (CAR T cells) targeted towards CD19. He has been working over the last few months on this project under the mentorship of Carlos A. Tirado, Ph.D. section chief cytogenetics at Baylor Scott and White Health in Temple, Texas. The evolution to a highly targeted CAR T immunotherapies offers to supplant general cytotoxic approaches of the past. However, the loss of CD19 as a target (antigen escape) has proven to be the Achilles heel of traditional CAR T cell therapies, leaving patients with little hope for complete remission. To counter this, more specific and stable targets must be discovered. In his research, we sought out to find proteins that are drastically upregulated or specific to the surface of different cytogenetic subgroups of B-ALL. These tumor specific markers could then be used to create antibodies against the tumor cells. Equipping the tumor specific antibodies to a genetically modified CAR T cell could create a unique target tailored to the patient's subgroup of leukemia making antigen escape significantly less likely. Our goal is to continue to identify highly specific targets on the peer-reviewed scientific literature to enable the development of more effective personalized immunotherapies in the near future.