

Senior Research Project

Desmond Turner

- **Major:** Physics with Engineering Path
- **Minor:** Mathematics
- **Hometown:** Spearsville, LA
- **Activities:**
 - Playing football and video games
 - Working out
 - Hanging out with friends
 - Eating great food
 - Traveling
 - Watching YouTube videos
- **Career Goal:** To become a successful engineer that can help improve people's lives



Project title: Use of Neodymium Magnets in Football Helmets to Help Reduce Chances of a Concussion

Supervising faculty member: Tikhon Bykov

Project Abstract:

Concussions are unfortunately a common injury in the sport of football and approximately 60 percent of football concussions caused by helmet-to-helmet hits. The purpose of my project was to reduce the risks of concussions in the sport of football. The way I attempted to achieve that goal was by putting strong magnets called neodymium magnets inside the football helmets. The goal was not to stop the collision but to reduce the force due to the slightly slower impact from the magnets repelling in close contact. The neodymium magnets were placed in the front, back, top and both sides of the football helmet. The force that helmets would exert on each other during a collision was measured with magnets inside the helmet and without magnets in order to compare the results. The data shows that the magnets did reduce the force of collision but more precise results could be obtained with better equipment.