Name: Kartik Ramachandrula, Sophomore (10) @ Brookfield Central High School

Hobbies: Tennis, badminton, linguistics (Sanskrit, Telugu, Latin), Indian violin, coding, science bowls, teaching, Minecraft.

Clubs: Science Bowl Club, FTC Robotics, Math Club, Latin Club, Sanskrita Bharati USA (SAFL), Badminton Club, Tennis Team, North South Foundation.

Contest/Competition Experience or Honors: U.S. Physics Team (23), USAPhO Bronze (22), Qualifier (22,23), USAJMO Winner (23), Honorable Mention (22), Qualifier (21, 22, 23), AIME Qualifier (21, 22, 23), MATHCOUNTS Nationals Qualifier (19,20,21), NSB Finalist (19,20,21), FTC Worlds Championship Qualifier (22), Black Belt in Taekwondo.

Autobiography:

In the Telugu language, there is a common proverb that translates to "For a billion problems, there are an infinite billion solutions." This saying has always inspired me to believe that the universe is full of fascinating problems and that by using our problem-solving skills, we can crack them. Ever since I was young, I have been deeply fascinated by mathematics and the art of problem-solving. Starting with a few basic axioms and a touch of intuition, unraveling complex problems in an elegant and rigorous manner is truly amazing to me. At the same time, I have also been drawn to the sciences and the way we can describe and predict the complexities of the universe. For me, physics is the perfect bridge between problem-solving and exploration of natural phenomena.

In elementary and middle school, my interests in problem-solving and science were mainly focused on contests such as MATHCOUNTS and National Science Bowl. While preparing for the National Science Bowl, I realized that being labeled as the "math main" was not enough, and I embarked on a journey to utilize problem-solving skills in another field. In 7th grade, I began reading Giancoli's introductory physics book and was amazed at how similar the thrill of flipping through its pages and solving its exercises was to my previous experiences with math.

Using the fundamental knowledge I gained and my zeal for challenges, I attempted the F=ma in 8th grade, but unfortunately, I did not clear it. Determined to improve, I spent that summer learning calculus and studying HRK which enabled a deeper understanding of mechanics, and practicing with Morin's blue book full of beautiful problems. With this expanded knowledge base, I was able to qualify for the USAPhO in 2022. By that time, I had ventured beyond mechanics into the intimidating realms of E&M, Thermodynamics, Optics, and Modern Physics. At first, I struggled to comprehend intangible concepts and equations, especially relativity. Nevertheless, I persisted and sought help from open source courses and a plethora of handouts. Over time, I developed some intuition for solving physics problems, an ongoing and invaluable endeavor, and was thrilled to qualify for the U.S. Physics Team this year.

I love problem-solving, and I love learning more about the universe. Together I formed my passion for physics which I hope to deepen and share with the community. I am extremely honored to be invited to the U.S. Physics camp this summer where I can enrich my problem-solving skills, enhance my understanding of the marvels of the universe, and engage with a community of enthusiastic physicists. Thanks to my family and all the mentors that have been so helpful and instructive in my unceasing journey in physics.