

Tae-Eun Kim



School: Whitefish Bay High School

SMART Team Projects: Junior year, our SMART Team studied how our immune system recognizes pathogens, such as viruses, and the steps it took to alarm the body. We were particularly interested in how a receptor of a T-cell binds to a certain protein called MHC II, which holds a fragment of the pathogen. Our mentor was Dr. Jack Gorski of the Blood Center of Wisconsin. My senior year, we continued to work with Dr. Gorski and Dr. Andrea Ferrante, in particular, to further our understanding of the immune response. This time, we explored two types of MHC II proteins, HLA-DR and HLA-DM, and their partnership to maintain a long-lasting, stable, and quick immune response.

College: Harvard

Major: Government

Current career plan: undecided

Impact of SMART Teams on me: High school science for me was an 800 page textbook and occasional labs. It wasn't that exciting. SMART Team was cool in that you can use Rasmol and actually see the protein of interest. You can twirl the protein around, zoom way in to see individual amino acids, zoom way out to see the protein as a whole, and assign colors to certain molecules, bonds, subunits...etc. It made more sense for me to understand, for example the properties of beta sheets, by seeing it rather than reading a paragraph about it in a book.

Favorite Memory of SMART Teams: On SMART Team, there's too many Saturday morning meetings :) But they feed you with snacks and drinks, so it's a little more bearable. My senior year, our primary mentor was Dr. Ferrante. We called him Andrea. Here's some scientific background: HLA-DR is an MHC II protein that holds a placebo antigen fragment called CLIP before it receives the actual antigen fragment. Whenever, Andrea would talk about CLIP, his Italian accent would encourage him to say, "Cleeeep." It made the moments of being overwhelmed with massive amounts of scientific information easier and humorous.