When thinking about how I wanted to write about my scientific and research interests, I realized that my interests are varied and diverse; however, they are also interconnected in many ways. I figured a unique way to illustrate these interests (and demonstrate my passion for displaying data) would be to create a map that could be used to highlight the breadth and connectedness of the domains of science and research I enjoy--an “interest map”.

Above, you see my current interest map. Each node is an interest of mine and they are sized according the level of interest at the moment with my primary interesting being computational genomics. Each edge between the nodes are weighted to the degree of how connected the two topics. The degree of connectedness was calculated by the number of publications in NCBI that contain both terms. For example, as you might expect, the words medicine and oncology are used together in many papers so they get a high weight of connectedness. The colors represent the modularity class, meaning nodes that are similarly colored have dense connections between the nodes but sparse connected with nodes of other classes. The classes grouped into (mostly) logical groups which I colored red, which encompasses a lot of medical interests; blue, with data and computational science interests; and purple, which represents the intersection between biology and computers. More details about the interest map’s creation are in the projects section.

For each of the classes of interests, here are some projects I am or have worked on:

My original interests in science came from the hope of applying findings to complex medical disorders ranging from cancers and inborn errors of metabolism to neuropsychiatric disorders.

I am currently a second-year medical student at Vanderbilt University where I am exploring my clinical interests. I am in the Medical Scientist Training Program (MSTP) which provides integration between my MD and PhD training to position me as a future leader as a physician-scientist.

I also spent time in India studying public health and worked with collaborators at the All India Institute of Medical Science to investigate barriers to health care for women.

My overarching research goal is to use computational tools to understand the genetics of complex and heterogenous disorders. My undergraduate degree from the University of North Carolina Chapel Hill is in Quantitative Biology where I focused my studies on human genetics. Additionally, I have approached research questions in computational genomics from multiple angles:

* Investigating RNA structure’s relationship with human disease
* Worked to create a pipeline for CNV calling for use in pharmacogenomic association studies
* Developed a queryable database integrating CNV data with exome sequence data to investigate Autism Spectrum Disorder