

## *Department of Physics and Astronomy*



### Summer 2019— Andrew Santos

Dr. Fischbach's Group

Some of the strangest, most antisocial particles in the universe are neutrinos. They are produced from a variety of sources and come in three "flavors" (i.e., the actual scientific term for "types" of neutrinos). In fact, there are enough of them from one source, the Sun, that go through your fingernail every second for every person on the planet to have a handful. Nobody has ever felt them bite, though, which is indicative of how difficult they are to catch. My research with Dr. Fischbach focuses on these weird players from the cosmic stage, exploring (i) how they might talk with radioactivity through an unknown interaction and (ii) what consequences this might have for experiments and technology. Over the past year or so, I have focused on how to model this potential interaction, how to design experiments to search for it, and how it could be applied to communication systems. It has been an experience of learning how creativity and rigor collide in research. I am forever grateful for Dr. Fischbach's enthusiasm and mentorship and cannot wait to continue chasing after these shy objects.