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# 2018 YOUNG INVESTIGATOR GRANT

## Augmenting Chimeric Antigen Receptor T Cell Induced Epitope Spreading for Pediatric Solid Tumors

*PI: Michael Leibowitz, MD/PhD, Children's Hospital of Philadelphia*

Dr. Leibowitz's study will look at the potential of an immunotherapy for solid tumors. Immunotherapy has been successful in certain pediatric blood cancers but is hard to replicate in non-blood cancers, like solid tumors. His project investigates a process called "epitope spreading" where cellular immunotherapy induces non-targeted cancer cells to die and triggers the immune system to react against cells that express different bio-markers. His project hopes to expand epitope spreading induced by reprogrammed immune cells in pediatric solid tumors, so that cellular immunotherapy may become a viable treatment option.

UPDATE 1: "With the support of SebastianStrong Foundation, I was able to hire a technician in the lab, which has been very helpful in advancing our project. We are currently performing in vivo mouse experiments to determine whether modification of our CAR T cells to secrete FLT3 ligand enhances killing of solid tumors through epitope spreading. I am excited to see what the data will show."

UPDATE 2: "Recently, we found that combining an antibody that activates the immune system, used in combination with CAR T cell therapy, augmented epitope spreading and solid tumor regression in mice. I'm in the process of alienating this finding in other tumor models and other strains of mice. I hope to have the experiments complete and ready for publication within the next 6-12 months.