CURRENT RESEARCH

Using mathematics to work towards a cure for cancer

According to the American Cancer Society data, 585,720 patients passed away in the U.S. in 2014 due to cancer. It is therefore no surprise that new models and therapies to help understand and treat cancer are necessary to improving the health and well-being of the American public and the global community. Dr. Doron Levy, of the University of Maryland, is driven by the promise that mathematics could aid in curing cancer. Using mathematical and quantitative tools to make sense of the mechanisms that control the dynamics of cancer, his research has novel insights upon the role of the immune response in controlling the progression of the disease. Bringing mathematics to cancer studies is a substantial step forward as it provides an understanding of the disease dynamics, reaching beyond the contemporary and experimental tools. Within cancer studies, Dr. Levy’s research will allow researchers to develop a systematic method to phenotype cancer. Therefore, his approach is highly significant as it can potentially lead to the design of personalized therapy in the form of specific therapeutic strategies.

Dr. Levy’s research within applied mathematics walks a unique balance between application and communicating with doctors and experimentalists that will eventually use his research to better inform their practice, conduct clinical trials, and guide therapies. As a Guggenheim Fellow, he has been recognized by his novel approach in which he allows doctors and experimentalists to truly drive his research with the hopes that his approach will lead him to the most meaningful conclusions for providers and their patients. In collaboration with researchers at the Carnegie Institution, Stanford University Medical School,...