

1135-92-2301 **Lisette dePillis*** (depillis@hmc.edu), Department of Mathematics, Harvey Mudd College, 301 Platt Blvd, Claremont, CA 91711. *Mathematical Modeling of Immune Dynamics in Disease.*

Immune system dynamics in the context of a number of diseases, including certain cancers and type I diabetes, continues to play an increasingly central role in the development of new treatment strategies. The critical importance of the immune system in fighting such diseases has been verified clinically, as well as through mathematical models. Many open questions remain, however, including what may lead to non-uniform patient responses to treatments, and how to optimize and personalize therapy protocols. In this talk, we will present a sampling of mathematical disease models we have developed that help us to simulate immune system interactions, disease dynamics, and treatment approaches that may slow, or even reverse, disease progression. (Received September 25, 2017)