Heparin-induced thrombocytopenia (HIT) has always been an elusive disease to study, not only because of the polyclonal nature of the putative antibodies involved, or the heterogeneity of antibody antigenicity between affected individuals, but also the frequent occurrence of non-pathogenic antibodies. With the help of the Kanematsu/Novo Nordisk Award, I had set out to map the epitope of these non-pathogenic antibodies in order to better differentiate them from true pathogenic antibodies associated with clinical disease. But we made some unexpected discoveries along the way that have illuminated the scope of the challenge further than we had anticipated. Our results thus far challenge the accepted dogma that cardiac surgery is associated with a high frequency of non-pathogenic HIT antibodies. Secondly, we have found that some patients who test positive to commercially available ELISA screening assays may have antibodies cross-reacting with nucleic acids rather than heparin. Finally, we have refined a method of expressing and purifying recombinant PF4 that we hope to use to complete our panel of PF4 mutants and thereby determine the antigenic specificity of true non-pathogenic HIT antibodies.