

Understanding, Treating and Avoiding Hematological Disease: Better Medicine Through Mathematics?

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This talk will trace the use of mathematical models (typically framed as systems of differential delay equations) in conjunction with clinical and laboratory data in the development of our understanding of the origins of the dynamical disease cyclical neutropenia. I will then go on to outline how the modeling and understanding led to the development of effective treatments of the disease. The last part of the talk will outline how we have used that insight to avoid other hematological problems associated with the all too common administration of chemotherapy.