1027-92-157 **David M Bortz*** (dmbortz@colorado.edu), Applied Mathematics, University of Colorado, Box 526, Boulder, CO 80309-0526, and **John G Younger** (jyounger@umich.edu), Department of Emergency Medicine, University of Michigan Medical School, 1500 E. Medical Center Drive, Ann Arbor, MI 48109. *Bacterial Aggregation Dynamics.* Preliminary report.

Klebsiella pneumoniae and Staphylococcus epidermidis are the most common causes of intravascular catheter infections. Given time, infected devices in the bloodstream become a source of a bloodborne plume of mediators, bacteria, and bacterial and host matrix. The dislodged material can actually leave the catheter surface at nearly half a meter per second, either coming to rest in a microvascular debris field in the lung or passing through into the arterial circulation. Our current model for the dynamics of the size-structured population of aggregates in a flowing system is based on the Smoluchowski coagulation equations.

Our current model for the dynamics of the size-structured population of aggregates in a flowing system is based on the Smoluchowski coagulation equations. I will discuss the progress of several investigations into properties of our model equations, choices in experimental design as well as a derivation of an alternative fragmentation kernel in laminar flow. We use these results to predict the persistence of capillary-sized aggregates in circulation. (Received February 25, 2007)