

1100-35-75

Avner Friedman and **King-Yeung Lam*** (lam.184@math.ohio-state.edu). *Are Small Granulomas Stable?*

In the present study we develop a simple free-boundary type model of granuloma, which refers to collection of immune cells in human. The model involves just macrophages and bacteria, and was introduced earlier, in the radially symmetric case, in [Friedman-Kao-Leander, submitted]. We first establish the existence of radially symmetric steady state granulomas with any radius R ; $0 < R < R^*$, where R^* is given explicitly by the model's parameters. Then we consider mathematically the linearized stability/instability of small radially symmetric steady states. This is joint work with Avner Friedman (OSU). (Received January 29, 2014)