962-92-1402 **Michael C Reed*** (reed@math.duke.edu). *Why is Mathematical Biology so Hard?*

In mathematical biology, one tries to understand highly complex systems whose emergent behavior is not easily traced to simple physical laws. Often, mthese systems involve many different time and space scales and an important part of the problems is to determine which variables on which scales are fundamental to behavior being studied. Furthermore, different systems (or individuals or species) are similar or different depending on what scale one is examining. Finally, each system is typically imbedded in a host other systems which influence (or control) its behavior. Examples of these difficulties will be given. (Received October 03, 2000)