



Supplementary Figure 1: Frequency-input curves for selected values of  $c_m$  for the various models.  $c_m$  is altered everywhere. A) The one-compartment Hodgkin-Huxley model, B) The ball-and-stick Hodgkin-Huxley model, C) Allen model 1, D) Allen model 2, E) Allen model 3, G) The relative difference between 1.0  $c_m$  and 1.5  $c_m$  at the largest current these curves have in common