Discussion Question(s) - Module 2

Consider an electrically excitable cell in which the time at which the voltage-activated potassium channel conductance begins to increase above its baseline value (i.e., when the voltage-activated potassium channels begin to open) is the same as in a "normal" electrically excitable cell (see, e.g., Module 2, Video 1, Slide 5) BUT the time course of the rise to a maximum value and the subsequent return to baseline of potassium conductance is abbreviated (time to reach peak conductance from baseline is reduced; time to return to baseline from peak conductance is reduced) in comparison to that of a "normal" electrically excitable cell (again, see, e.g., Module 2, Video 1, Slide 5). In addition, assume that (1) the time course and amplitude course of the voltage-activated sodium channel conductance is as it is in a "normal" cell and (2) the amplitude range of the potassium channel conductance is the same as in a "normal" cell. How would the described change in potassium channel conductance affect the cell's action potential (amplitude and time course)? Briefly explain your reasoning; use sketches and text as necessary. Please **post your response to the Discussion Board by 6 PM on day 4 of the module**.

Rev 0, 8/5/16
Rev 1, 9/6/16 - change right margin
Rev 2, 1/30/17 - clarifying language WRT K conductance
Rev 3, 8/17/17 - formatting; no change to contents
Rev 4, 7/12/18 - from Fall 2017