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**Steven J Cox\*** ([cox@rice.edu](mailto:cox@rice.edu)), CAAM MS 134, Rice University, 6100 South Main Street, Houston, TX 77005, and **Kresimir Josic** ([josic@math.uh.edu](mailto:josic@math.uh.edu)), Department of Mathematics, University of Houston, 4800 Calhoun Road, Houston, TX 77204. *Voices from the fringe - How distal synapses make themselves heard.*

A nerve cell is a tree that receives 10,000 synaptic inputs distributed over its surface. Each excitatory input produces a small local depolarization that diffuses toward the cell body. If the resulting depolarization at the cell body is sufficiently strong than the cell fires an output to its 5,000 downstream partners. All else being equal, synapses close to the cell body have a much greater impact on the firing of the cell. We here analytically delineate how distal inputs must scale their conductance and time course in order to ‘appear’ equidistant. (Received September 22, 2006)