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**Janet A. Best\*** (best.82@osu.edu), **Michael C. Reed**, **Sean D. Lawley** and **H. Fred Nijhout**. *Modeling volume transmission and neurotransmitter homeostasis.*

In volume transmission, neurons in one brain nucleus send their axons to another nucleus where neurotransmitter is released into the extracellular space, modulating the activity of the electrophysiological circuitry. Here we present a number of mathematical issues that arise in calculating the neurotransmitter concentration in the extracellular space and its homeostatic regulation. (Received September 20, 2016)