Does Math Matter to Brain Matter?

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125 Willey Hall
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The human brain contains about 100 billion neurons, each making about 1000 synaptic connections with other neurons. This huge dynamical system communicates with itself and its environment via electrical impulses called spikes. How is incoming information turned into spikes, and how do spikes create decisions and behaviors? I will show how mathematics helps us model and analyze such questions, involving events from single neural spikes to decisions that change our lives.