

Experimental measurements need a model too

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Experiments alone are insufficient to advance health and medical science. But it can be hard (and often wrong) to directly equate a mathematical model's variable (number of cells infected) to an experimental measurement (cells with measurable fluorescence for a viral protein marker). Through examples from my group's work in virology, cancer and neurodegenerative diseases, I will show how one can correctly incorporate experimental measurements into mathematical models. I will also discuss how failing to do so impacts the estimated parameters and the predictive ability of the models.