NOMENCLATURE

Amplitude Modulation (AM): A technique used in electronic communication to transmit information through a radio carrier wave. Here the strength of the transmitted signal varies in relation to the information being sent. We have adapted this term to nuclear localization to describe a phenomenon in which the nuclear intensity of a protein varies in response to a biological signal.

Directional Selection: Selective pressure favoring the increasing (or decreasing) values of a quantitative trait- causing allele frequency to continue to shift in one direction.

Frequency Modulation (FM): A technique used in electronic communication in which information is conveyed over a carrier wave by varying its frequency. Note that this in contrast to amplitude modulation in which the frequency is constant. We have adapted this term to nuclear localization to describe a phenomenon in which the frequency of nuclear localization bursts varies in response to a biological signal.

Gene Expression Noise: Copy number variability in mRNA or proteins across a clonal population of cells.

Green Fluorescent Protein (GFP): A fluorescent marker frequently used in molecular biology. Spectral variants in several different colors also exist.

Flow Cytometry: A technique to count and characterize (measure gene expression of) microscopic particles (including yeast cells) suspended in liquid

Promoter: A region of DNA that activates transcription of a particular gene, its typically located upstream of the gene.

Pulse-Width Modulation (PWM): A widely employed technique in electronics in which an analog signal is controlled digitally. Here the duty cycle, or width, of a square wave (an all-or none phenomenon) is modulated to encode a specific analog level. This phenomenon has been co-opted to localization dynamics. In this case, the all or none phenomenon is a burst and its duty cycle, or width, is the duration of the burst.

Static Heterogeneity: When cells burst, they can do so independently of other cells around them. As a result, only a small percentage of cells burst at any given time; this dynamic phenomenon creates creating population heterogeneity. However, it is also possible to create such heterogeneity without any dynamics. In this case, cells respond with nuclear localization and that localization remains constant over time, but only a fraction of cells respond as several cells remain cytoplasmic.