Biologically-relevant Intermediate signal-to-noise ratio: in spite of the large number of neurons, the total amount of information provided by the population remains finite.

![Diagram showing the relationship between sensitivity to stimulus and number of neurons, with low, intermediate, and high SNR regions.]
• Single neurons convey small amounts of information about the stimulus.

• Neural populations convey a finite amount of information.

• In the limit of large population size, the sufficient statistics have a linearly-weighted form and a Gaussian distribution, even in many nonlinear, coupled spiking networks.

• This makes it easy to compute optimal decoders and information rates.
The optimal Bayesian decoder is well-approximated by a linear function of the sufficient statistics when $n$ is even moderately large.