Leabra Mechanisms Deep (many Learning layers) $\Delta w = \langle xy \rangle_s - \langle xy \rangle_m (Error-driven)$ + <xy> - <y> (BCM Hebbian) **Bidirectional** k-Winners (sparse distributed **Excitation** Inhibitory representations) Competition $\frac{dV_{m}^{t}}{dt} = t \sum_{c} g_{c}^{t} \overline{g}_{c} (E_{c} - V_{m}^{t})$ Integrate & Fire **Point Neurons**