Discussion Session #1- June 15, 2022, Mechanisms of Neural Plasticity: Implications for Adaptation of Nervous System Structure & Function Across The Lifespan.

1. How would you define plasticity of the nervous system; how is it measured, i.e., what methods do scientists use to make claims of plastic changes in the brain?

2. What is the proposed role of synaptic plasticity in adaptive brains; how has the concept of a Hebbian synapse shaped our thinking regarding plasticity? How might changes in dendritic spines (spinogenesis, spine elimination, altered shape, density/neuron, receptor proteins, biochemistry, etc.) contribute to learning and memory?

3. What brain mechanisms *other than excitatory synaptic alterations* are thought to contribute to lasting changes in structure/function of the brain: e.g, inhibitory neuron contributions, dendritic potentials, altered dendritic or axonal arbors, neurotrophins, E-I network adaptations (including self-organization), neurogenesis, changes in myelination, etc.?

4. How might age, experience, lifestyle, exercise or neuropathology influence brain cell (neurons and glia) structure/function?