



CENTER FOR COGNITIVE NEUROSCIENCE

Photo courtesy of Greg Hickok, Social Sciences.

- Cognitive neuroscience research at UCI draws on a wide range of technologies and research tools/approaches including:
 - 3D lesion-symptom mapping for assessing effects of stroke
 - Anechoic sound booth for auditory assessment
 - Brain-computer interface technologies
 - Diffusion imaging for mapping brain connectivity
 - Functional MRI for high spatial resolution brain activity imaging
 - High-density EEG and MEG for high temporal resolution brain recordings
 - Quantitative modeling
 - Robotics for constructing cognitive models
 - Transcranial Magnetic Stimulation (TMS)
- Recent research has generated new models for understanding stuttering and certain forms of aphasia, and novel methods for diagnosing Alzheimer's disease

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The Center for Cognitive Neuroscience (CCNS) uses advanced brain imaging, computer modeling and neuromorphic engineering to investigate how brain function enables mental abilities such as language, learning and memory, vision, hearing, movement, emotion, attention, decision making, brain plasticity and more. It also studies how dysfunctions of the brain cause mental disorders such as Alzheimer's disease, autism, stroke-induced language deficits, stuttering and hearing loss.

investigate

CCNS uses an interdisciplinary approach that integrates expert knowledge in psychology, neuroscience and neurology, biomedical engineering, quantitative modeling and robotics.

innovate

Cognitive deficits caused by brain injury or atypical development impact millions of Americans. CCNS research seeks to understand how the brain creates the mind to enable communication, perceptual understanding, action, learning, memory and thought. Basic understanding of the mind and brain leads to insights on cognitive disorders and new diagnostic and treatment approaches. It also fosters development of new applied technologies in brain inspired computers.

impact