

Mission Statement

The human brain contains 10^{11} neurons, which are thought to be its computational units. These cells are densely connected within the brain, with the average neuron making approximately 10^4 direct connections, or synapses, to other neurons. Surprisingly, these connections can fail to propagate up to 95% of neuronal signals during steady activity.

How do thought, perception, and creativity emerge from the collective activity of the astronomical number of unreliable neurons that make up the human brain? Did these neurons evolve to become noisy, and why are noisy neuronal networks advantageous? What role does this noise and collective neuronal activity play in neurological diseases?

The Initiative for Collective Neuronal Dynamics and Epilepsy (ICNDE) is a scientific research organization founded to answer these fundamental questions and explore the nature of spatiotemporal patterns of neuronal activity in the brain. These patterns or collective excitations are ubiquitous in nature, occurring in noisy systems from semiconductors to ant colonies. In the brain, this coherent activity not only likely underlies cognitive processes and consciousness, but also is essential to our understanding of diseases of cognition and epilepsy. By engaging in this research, ICNDE hopes to make a significant impact in our understanding of the brain.

ICNDE's mission includes not only advancing scientific knowledge, but also making its scientific endeavors intelligible to large numbers of people and creating public interest for its research. While public funding through governmental granting agencies has been, and will continue to be, the major contributor of basic scientific research, ICNDE believes that contributions from individuals will become an increasingly important funding mechanism in science. It is ICNDE's goal to have a significant portion of its total funding originating from individual contributions. ICNDE hopes to attract donors who will not only make financial commitments, but also those who will have an intellectual stake in the success of ICNDE. To promote this effort:

- ICNDE will hold public lectures to educate people in the basic and clinical neurosciences as well as the nature of ongoing research at ICNDE.
- Individuals may make contributions to ICNDE in any amount, and may specify how their contribution is to be allocated.
- ICNDE will not have a payroll. All employees and officers will be non-salaried.
- 100 % of all contributions will go to direct research costs including equipment and supplies, and will not cover overhead or indirect costs unless specified by the contributor.
- Overhead will be minimized and any remaining operating costs for ICNDE will be paid for by grants, partnering academic institutions, or donated by the founder.
- All of ICNDE's financial statements, tax returns, and transactions will be made available on the organization's website www.brainclouds.org.