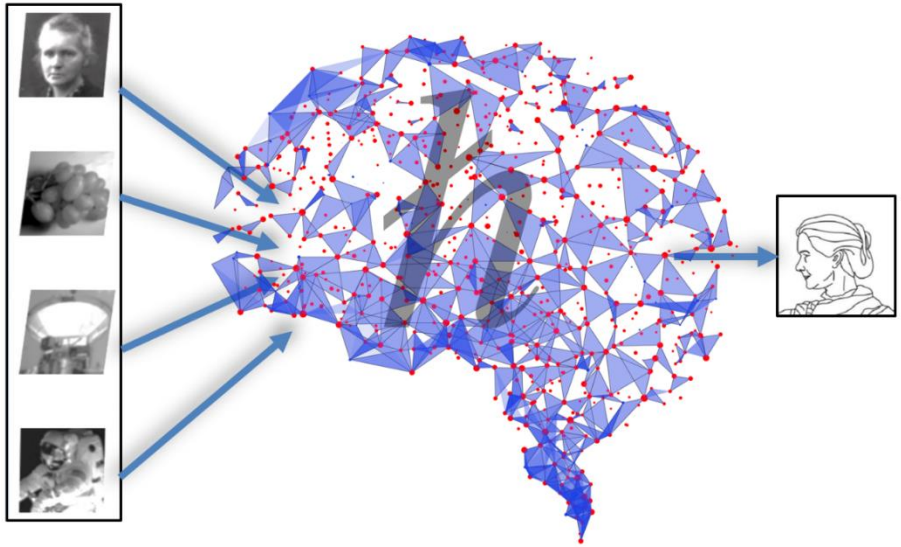
Quantum-Materials for Energy Efficient Neuromorphic-Computing (Q-MEEN-C)

Ivan K. Schuller (University of California, San Diego); Class: 2018-2022

MISSION: To lay down the quantum-materials-based foundation for the development of an energy-efficient, fault-tolerant, computer that is inspired and works like a brain ("neuromorphic").



A neuromorphic computer readily distills the image of a famous scientist from multiple inputs.

https://efrc.ucsd.edu

RESEARCH PLAN

Q-MEEN-C will breakaway from the conventional Turing-von Neumann paradigm by developing quantum materials for new types of bio-inspired ("neuromorphic") devices. Their exotic properties will be harnessed to develop completely novel functionalities: artificial synapses, neurons, axons, and dendrites that can be used to construct machines with artificial intelligence.

U.S. DEPARTMENT OF ENERGY | Office of Science
UC San Diego | UCSB | THE UNIVERSITY OF CHICAGO | PURDUE UNIVERSITY | NYU | NIST
ILLINOIS | UCDAVIS | BROOKHAVEN NATIONAL LABORATORY | Northwestern University | cnrs | UNIVERSITY OF MARYLAND