

UCLA Department of Physics & Astronomy

COLLOQUIUM

Thursday, May 25 at 4 p.m.
1-434 PAB

**Space is Time: Einstein's Solution to the Origin of
Consciousness and Intelligence**

Katsushi Arisaka
(University of California, Los Angeles)



How can we construct a conscious, stable 3D vision from ever-changing, shaky 2D retinotopic images? The solution was given by Einstein a century ago; the distance between two points must be measured by the time required for a signal to travel from one point to the other. In other words, "space is time." We reconstruct the external 3D space in our brain by assigning three absolute times (= phases) through slowly traveling brainwaves.

Thanks to this space-to-time conversion, our brain developed a new strategy to navigate the "hyper-space" of language in the wider frequency-time domain, allowing us to develop intelligence and creativity. After a decade of investigation from *C. elegans* and fruit flies to humans, working together with > 800 undergraduate students, we have accumulated overwhelming evidence to support this concept.

Refreshments at 3:30 p.m. on the PAB Patio. Undergraduates Welcome!