Biophysics and Systems Biology Seminar Series

Akihiro Kusumi, D.Sc.

Professor
Okinawa Institute of Science and Technology Graduate University

"Signal transduction by transient molecular complexes: findings by single-molecule tracking"

Biography:

Professor Akihiro ("Aki") Kusumi received his Doctorate in Biophysics from the Department of Biophysics, Kyoto University, in 1980. He is a professor of biophysics at the Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, and a Visiting Professor at Okinawa Institute of Science and Technology Graduate University. He has won several awards including the Setoh Award from the Japanese Society for Microscopy, the Ministry of Education Award at the 45th Science and Technology Film/Video Festival, the Excellency Prize at the 14th TEPIA High-Tech Video Competition, and the Excellence Award at the 52nd Science and Technology Film/Video Festival. Prof. Kasumi is best known for his brilliant work in capturing single molecule dynamics at 40,000 frames/sec, which allowed him to propose an explanation for the reduced diffusion speed of proteins in the membrane. This model called the "hop diffusion" model, revolutionized and furthered the idea of lipid rafts. Using colloidal gold tags he was able to see short time confined movements inside GPI-anchored receptor clusters showing that rafts may confine molecules transiently and not block molecular movement across regions of the membrane. This new finding changed the thinking about how the cellular signalling system works.

Thursday, February 22, 2018 at 12:00 noon
Natural Sciences 2, Room 1201

Host: Dr. Michelle Digman, mdigman@uci.edu.
If you're interested in meeting with Professor Kusumi, please contact Dr. Digman.