

KAVLI INSTITUTE FOR THEORETICAL PHYSICS

Presents

The Sixtieth KITP Public Lecture

Sponsored by Friends of KITP

Randy Schekman

How Cells Package and Traffic Proteins for Export

Human cells manufacture thousands of different proteins which they encapsulate into membrane-wrapped packets called vesicles. Vesicles buzz around within the cell to many different destinations, but some are delivered to the cell perimeter where they discharge their contents to the exterior. What are the mechanics of this export process, a mechanism nearly unchanged over a billion years of evolution.? How is it regulated? How can we exploit this ancient manufacturing and transportation system for the sake of modern medicine? Understanding this process and its regulation has brought many benefits (besides a trip to Scandinavia); for example, it has allowed the biotech industry to exploit yeast as a production platform for the secretion of human proteins such as recombinant insulin. That process now supplies fully 1/3 of the insulin used by sufferers of diabetes worldwide.

About the Speaker

RANDY SCHEKMAN is a Professor and HHMI Investigator in the Department of Molecular and Cell Biology at UC Berkeley. He was educated at UCLA and Stanford University. His interest in the comings and goings of intracellular membrane packets was sparked during a postdoc with S. J. Singer at UCSD. When he moved to Berkeley in 1976, the genetic and biochemical approaches he “trafficked” in revealed how proteins enter and move between the cell’s compartments. In 2011, he was appointed Editor-in-Chief of the open access journal, *eLife*. Among his many awards, he shared the 2013 Nobel Prize in Physiology or Medicine for discovering the mechanisms regulating vesicle traffic. As a 12-year old, growing up in OC, he used a little projecting microscope to discover the hidden worlds inside of drops of pond scum. He gradually saved up money from doing odd jobs so he could purchase a professional microscope, but family members kept borrowing from his “Microscope Fund”. Finally, he had had enough, so... he ran away from home! That got his parents’ attention – soon after, he got a used Bausch & Lomb from a Long Beach pawnshop, which now resides in the Nobel Museum in Stockholm.

Wednesday, August 19, 2015
8:00 PM (reserved seats held until 7:50 PM)



Admission is Free
RSVP by August 14, 2015

at:

[http://www.kitp.ucsb.edu/
public-lecture-rsvp](http://www.kitp.ucsb.edu/public-lecture-rsvp)

or call

(805) 893-6363

***There will be open seating,
but a reservation is required***

Note special location

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many friends in the community.*

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