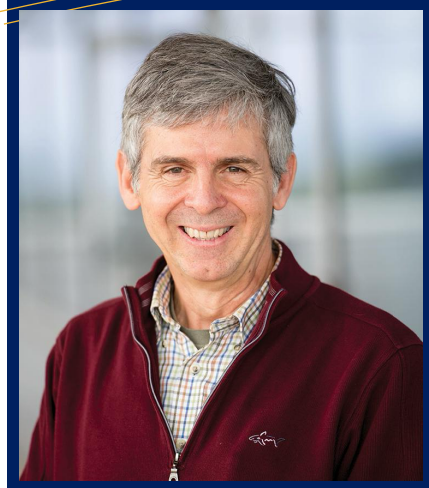
QUANTITATIVE AND SYSTEMS BIOLOGY COLLOQUIUM:

Relay Neuronal Stem Cells and Postnatal Neurogenesis



Arturo Alvarez-Buylla

Department of Neurological Surgery and
The Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research
University of California, San Francisco, School of Medicine

Personal Bio:

Dr. Alvarez-Buylla is a leader in the field of neural stem cells. He earned his Licenciado from UNAM, Mexico, and completed his Ph.D. and postdoctoral training in neurobiology at Rockefeller University. He began his academic career as an Assistant Professor at Rockefeller University in 1989 before moving to UCSF as a Professor in 2000. Over the years, his lab made many groundbreaking contributions to the understanding of embryonic and adult neurogenesis and how new neurons impact brain plasticity and repair. Dr. Alvarez-Buylla is a dedicated mentor. He trained and nurtured numerous emerging scientists in the field.

Abstract:

The continual birth of new neurons (neurogenesis) after birth and into adulthood critically depends on the persistence in the postnatal brain of primary progenitors, generally referred to as neural stem cells (NSCs). Whether NSCs persist in the adult human brain -- and whether these cells continue to produce new neurons -- remains a basic unanswered question. Our observations indicate that there is persistent recruitment of neurons in the brain of young children, but this process is rare, or, absent in adults. I will present recent work revealing a new migratory pathway for young neurons in the temporal lobe of the infant human brain. I will then discuss work in rodents showing how previously identified NSCs in the walls of the ventricles are depleted during juvenile and early adult life. New data suggest the presence of additional NSCs that lose their epithelial anchorage but retain the ability to generate new neurons and glial cells well into adulthood. We propose that these non-apical NSCs, serve as a relay to maintain neurogenesis for longer periods of time. The relevance of not apical NSCs to the continual recruitment of new neurons and glial cells in mice and humans will be discussed.

Date:

10/24/2024

Time:

10:30 AM - 11:45 AM

Location:

SSM 104

For more information, contact: Xuecai Ge
xge2@ucmerced.edu