Institute of Molecular and Cell Biology
A*STAR

SEMINAR ANNOUNCEMENT

We would like to invite you to attend this seminar hosted by Prof. Wanjin Hong:

Date: 7 November 2018, Wednesday
Time: 11:00AM – 12:00PM
Venue: Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis

Speaker: Prof. Vytas A. Bankaitis, E.L. Wehner-Welch Foundation Chair in Chemistry, Dept. Molecular and Cellular Medicine, Texas A&M Health Science Center, USA
Title: Golgi Lipid Signaling and the Construction of the Mammalian Brain

The Golgi apparatus is a central hub formembrane trafficking in mammalian cells, and our recent work in an in vivo murine embryonic neural stem cell (NSC) model shows that a Golgi phosphatidylinositol 4-phosphate (PI4P)-dependent pathway polarizes the NSC Golgi system into apical processes. Failure to execute apical loading of the Golgi system causes a cell-autonomous failure in establishment/maintenance of NSC polarity and failure in development of the neocortex. This pathway requires the action of a pair of phosphatidylinositol transfer proteins (PITPNA and (PITPNB) to promote Golgi PI4P psynthesis, and the actions of downstream effector proteins that respond to PI4P signaling. Finally, the PI4P-dependent regulation of Golgi apical positioning is transmitted to neuron progeny with downstream deficits in development of the embryonic mouse neocortex. Taken together, we have identified a novel mechanism by which PITPs, PI4P, and Golgi apparatus apical positioning regulate cell polarity and stem cell biology in the developing mammalian forebrain.

Biography:
Vytas Bankaitis is a world-class expert in lipid signaling and is widely considered the preeminent expert in the areas of lipid transfer proteins and their roles in functional diversification phosphoinositide signaling. The Bankaitis laboratory first discovered that lipid signaling is an essential regulatory component of membrane trafficking – a discovery which opened an entirely new field in cell biology. His stature is reflected by his regular appearances as invited speaker at major international conferences. As graduate student, Bankaitis made seminal contributions to the mechanisms of protein translocation across bacterial membranes and, as Helen Hay Whitney Fellow at CalTech (with Scott Emr), he first described what are now known as *VPS* mutants that led to subsequent discovery of the multi-vesicular body pathway. After progressing through the faculty ranks at the University of Illinois (as Beckman Scholar) and the University of Alabama-Birmingham School of Medicine, he was recruited to the University of North Carolina School of Medicine where he served as Chair of the Department of Cell & Developmental Biology for 11 years prior to coming to the TAMHSC where he holds the E.L. Wehner-Welch Foundation Chair in Chemistry. Bankaitis served as organizer for FASEB and Gordon Conferences, serves on several Editorial Boards, until recently was the Director of the American Society of Biochemistry and Molecular Biology Director of the Lipid Research Division, and has served on numerous NIH Study Section panels – both as a sitting member and as Study Section Chair.