

講演会



Derek Toomre, PhD

Professor of Cell Biology and
Director of the YALE 'CINEMA' Laboratory
(Cellular Imaging using New Microscopy Approaches),
Yale School of Medicine

“Nanoscopy – Probing the Future”

Abstract:

Super-resolution imaging holds great promise to bridge the gap between electron and light microscopy, enabling investigation of live cells at high resolution (tens of nanometer). Unfortunately, there are still very significant hurdles in both the instrumentation, probes and analysis. For instance, it is challenging to visualize thick volumes with ~10 nanometer axial resolution and most super-resolution movies of organelle dynamics are extremely short, often lasting only tens of seconds before bleaching, whether using STED or single molecule switching (SMS). Here we describe new advances in both instrumentation (e.g. 4Pi SMS) and new click chemistry high density environmental sensitive probes (**HIDE**) that target lipids and hide in the dark state that now allow nanoscopy of living cells in multicolor and multi organelle for up to 50x longer (!), allowing movies for tens of minutes. One SMS movie of a cell can encompass a million images, so rapid data analysis is also essential for SMS techniques. Examples that show both proof-of-principle and revealing new biology are shown.

日時 : 2018年11月12日(月) 16:30 ~ 17:45
場所 : 東京大学医学部2号館1階 小講堂

連絡先 : 薬学部薬品代謝化学教室
医学部生体情報学分野
浦野 泰照 (内 24850、23601)