

CARNEGIE MELLON UNIVERSITY BME SEMINAR SERIES 2019-2020

Stimulated Raman Scattering (SRS) Microscopy for Label-Free Bioimaging Applications



PRESENTED BY

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SCHEDULE AND LOCATION

Thursday, March 5
(10:30 AM-11:30AM)
Doherty Hall (DH) A302

Stimulated Raman scattering (SRS) microscopy is an emerging multiphoton technology for label-free biomolecular imaging in live cells and tissue. Unlike fluorescence microscopy, SRS imaging does not require the use of exogenous labels. SRS reveals chemical contrast from the Raman-active chemical bond vibration in the native samples, exhibiting strongly enhanced signal levels by a few orders of magnitude compared with spontaneous Raman, and therefore enables rapid Raman imaging. In this seminar, the state of the art of SRS microscopy technology and instrumentation will be reviewed. Two major bioimaging applications of SRS microscopy will be presented: i) rendering label-free neurosurgical pathology for image-guided precision surgery, and ii) tracking lipid droplets (LDs) dynamics in live cells through time-lapse SRS imaging.



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