

PHOTONICS SEMINAR

Dr. Frank Vollmer

Advances in Biodetection with Optical and Mechanical Microresonators

Faculty Host: Dr. Selim Unlu

March 3, 2015

1:30-2:30 p.m.

Room 901

Photonics Center

8 Saint Mary's Street

*Refreshments will
be served!*



Dr. Frank Vollmer will present his results on advancing chip-scale biosensing capabilities with optical and mechanical resonators. In the optical domain, he has developed a microcavity biosensing platform that is capable of monitoring single DNA molecules and their interaction kinetics, hence achieving an unprecedented sensitivity for label-free detection with light. In the mechanical domain, he is developing a new force-based biosensing technique based on the quartz crystal microbalance. By applying centrifugal forces to a sample, it is possible to repeatedly and non-destructively interrogate its mechanical properties in situ and in real time.

Dr. Frank Vollmer obtained his Ph.D. in Physics & Biology from the Rockefeller University in New York, New York in 2004. He then became leader of an independent research group at the Rowland Institute at Harvard University where he was appointed Rowland Fellow from 2004 to 2009. From 2010 to 2011 he joined the Wyss Institute for Bio-Inspired Engineering at Harvard University as a Scholar-in-Residence. In 2011, he was appointed group leader (untenured Associate Professor) at the newly established Max Planck Institute for the Science of Light in Erlangen, Germany. Since 2011, he is also appointed as Instructor in Medicine and Associate Bioengineer at Brigham and Women's Hospital/Harvard Medical School in Boston, MA, where he directs a satellite laboratory.