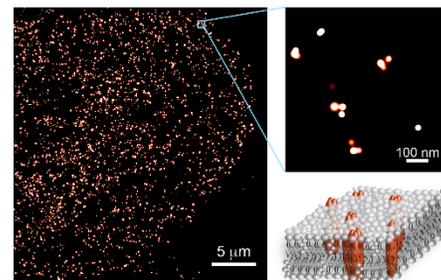


Advances in quantitative super-resolution microscopy

Dr. Tijana Jovanovich-Talisman

Assistant Professor of Molecular Medicine, City of Hope

Abstract: Significant advances in super-resolution microscopy include recently developed methods for quantitative data analysis. While these are powerful tools for evaluating the lateral distribution of proteins, the analysis process is still challenging because quantification requires the biophysical properties of the super-resolution probes to be accurately defined. This is a time intensive process that has to be completed for each fluorophore, set of acquisition parameters, and microscope platform. To streamline the process, we designed a novel and efficient *in vitro* assay for characterizing super-resolution probes. First, we established robust chemistry to covalently immobilize proteins to a glass surface with minimal background signal. Using this approach, we evaluated photoactivatable proteins (pa-GFP and pa-mCherry1) and fluorescent molecules (ATTO 488 and Alexa 647). The biophysical properties that we uncovered for the fluorophores were then used to quantitatively investigate organization of proteins on the cell plasma membrane.

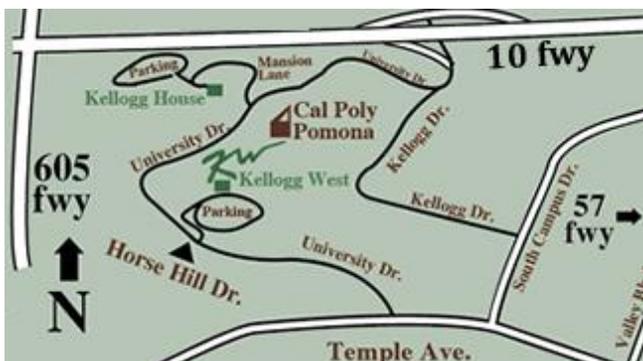


Distribution of trimeric vesicular stomatitis virus glycoprotein (VSVG)



About our speaker: Research in the laboratory of **Dr. Jovanovic-Talisman** brings together biology, chemistry and physics to probe biosystems. A major part of this program involves advancing quantitative pointillistic super-resolution microscopy methods. By combining this powerful single molecule technique with both classical biochemical strategies and novel nano-biology assays, Dr. Jovanovic-Talisman interrogates important biological mechanisms and is involved in developing novel therapeutic and imaging agents.

Dr. Jovanovic-Talisman received her B.Sc. in Physical Chemistry from the University of Belgrade, Serbia in 2000 and Ph.D. in Chemistry from Columbia University in 2005, under the guidance of Professor Ann E. McDermott. She engaged in postdoctoral research at the Rockefeller University with Professor Brian T. Chait and at the NIH with Dr. Jennifer Lippincott-Schwartz. After two years as an assistant professor of Chemistry at the University of Hawaii at Manoa, she joined the department of Molecular Medicine as an assistant professor at the Beckman Research Institute of City of Hope in 2013.



Enter campus from Temple Avenue, turning right on University. Once on campus, turn right at sign for Kellogg West, and go up the hill. Parking is free in the Kellogg West lot.

Wednesday, January 13, 2016

Reception: 6:00; Dinner: 7:00; Talk: 8:00
Meal: Buffet Style

Dinners: \$35 for registration by Jan. 7, \$40 after

(OSSC Student Members register free by Jan. 7, \$10 after)

[Kellogg West Conference Center](#)

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On-line Registration: www.osscc.org or

Contact: Bo Wang

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