



Principal Investigator Candidate Seminar Series For Molecular, Cell and Systems Biology

Dr. Amy Weeks

University of California – San Francisco
California, CA, USA

Title:

New chemoenzymatic tools for spatially-
resolved mapping of post-translational
modifications in living cells

Thursday, December 13, 2018
4:00 pm

Location:

Mount Sinai Hospital
Cooper Centre, Rm L3-300*
60 Murray Street, 3rd floor

Host: Dr. Anne-Claude Gingras

Dr. Weeks obtained her PhD in Chemistry at UC Berkeley, under the supervision of Prof Michelle Chang. There, she elucidated the basis for the molecular recognition of fluorine by fluoroacetyl-CoA thioesterase (e.g. *PNAS* 2012, PMID: 23150553; *PNAS* 2018, PMID: 29453276). She next joined the laboratory of Jim Wells (UCSF) as a postdoctoral fellow, where she has been developing new enzymatic tools for the N-terminal modification of proteins using protein engineering methods. She deployed these tools to map proteolytic cleavage events at the plasma membrane in living cells via spatially-restricted N-terminal tagging (*Nat Chem Biol.*, 2018, PMID: 29155430). In her own group, she is proposing to develop and apply chemical and enzymatic tools for spatially- and temporally-resolved analysis of posttranslational modifications (PTMs) inside living cells, including T cells during stimulation. Her initial areas of focus will be: 1) spatially-resolved mapping of proteolysis via enzymatic N-terminal tagging; 2) development of new enzymatic tools for proximity-dependent capture of the phosphoproteome; 3) development of chemical and enzymatic approaches to uncover the biological function of diptamide. Her research will bridge the gap between proximity labeling approaches that provide spatial information and proteome-wide approaches for the identification of post-translational modifications that provide functional insight.