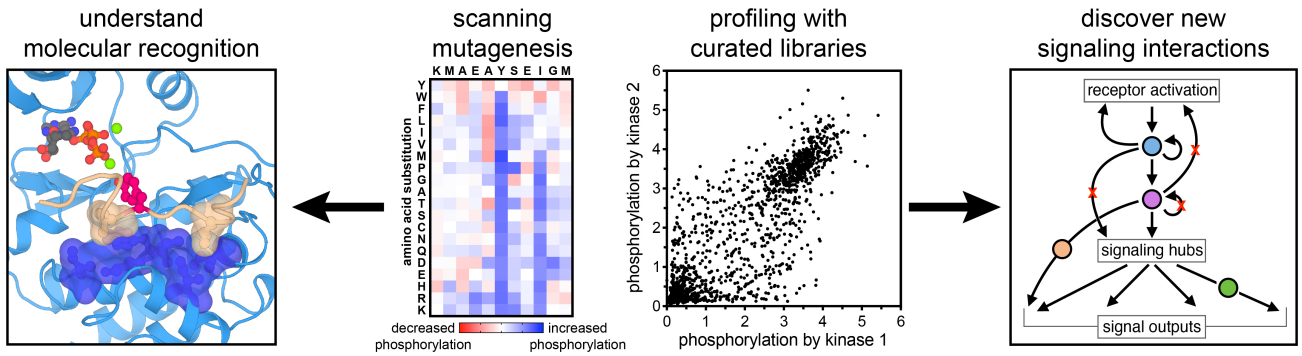
ASRC - City College of New York

Seminar in Biochemistry, Biophysics & Biodesign



SEMINAR LOCATION:
ASRC Main Auditorium
85 St. Nicholas Terrace

- *Current Cleared4 Pass or CCNY ID with gold V-22 sticker required for entrance*
- *Masks are required*
- *Maximum occupancy: 30*

THE SEMINAR WILL ALSO BE AVAILABLE ON ZOOM:

Click here for Zoom link

HOST:
Daniel Keedy
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FOR MORE INFORMATION, CONTACT:
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ADVANCED SCIENCE RESEARCH CENTER
THE GRADUATE CENTER
CITY UNIVERSITY OF NEW YORK

Wednesday, December 1, 2021

12:00 – 1:00 PM

CUNY Advanced Science Research Center, Main Auditorium
85 St. Nicholas Terrace, New York, NY

Neel Shah

Assistant Professor, Department of Chemistry
Columbia University

Sequence-dependent tuning of inputs and outputs in phosphotyrosine signaling

ABSTRACT Signal transduction through protein tyrosine phosphorylation is critical for many core functions of animal cells, including proliferation, survival, programmed death, and cell-cell communication. These processes are mediated by two large enzyme families, tyrosine kinases and tyrosine phosphatases, that collectively control the phosphorylation states of thousands of sites in human proteins. While it is well-established that tyrosine kinases and phosphatases can engage phosphorylation sites in a sequence-dependent manner, we know surprisingly little about how the sequences of phosphosites actually shape and tune signaling pathways. In this talk, I will describe a high-throughput biochemical platform that we have developed to profile the sequence specificities of phosphotyrosine signaling proteins. I will discuss how this technique has yielded new insights into T cell activation and how it can be used for the large-scale characterization of disease-associated mutations proximal to tyrosine phosphorylation sites. Finally, I will describe our efforts to understand the sequence-dependent activation of signaling enzymes bearing phosphotyrosine-recognition domains.