

Center for Research and Training in the Sciences (UTSA),  
Institute for Integration of Medicine & Science (UTHSA),  
Translational Science Graduate Program, &  
UTSA-UTHSA Joint Graduate Program in Biomedical Engineering  
invite you to attend

# STRECH

Seminars in Translational Research

Presents

## "Structural basis of RNA cap modification by SARS-CoV-2"

SARS-CoV-2, the causative agent of COVID-19 illness is responsible for nearly four million deaths worldwide. The nsp16/nsp10 enzyme complex of SARS-CoV-2 modifies the 2'-OH of the first transcribed nucleotide of the viral mRNA thereby converting the status of RNA cap from Cap-0 (m<sup>7</sup>GpppA) to Cap-1 (m<sup>2</sup>-O-m<sup>7</sup>GpppA). The 2'-O methylated RNA cap helps the virus evade immune surveillance in the host cell. By using X-ray crystallography and classical biochemistry methods we captured the nsp16/10 complex in the act of attaching a methyl group to the RNA cap. I will present several high-resolution crystal structures of nsp16/nsp10 heterodimer representing different states of RNA cap modification and discuss the important roles of divalent metal ions in this process. I will also present strategies for structure-based development of antiviral drug candidates.



### YOGESH GUPTA, PH.D.

Assistant Professor of Biochemistry & Structural Biology  
University of Texas Health Science Center at San Antonio  
Greehey Children's Cancer Research Institute



Friday, September 17, 2021  
9:00AM - 10:00AM

For information on participating in this virtual seminar, please head to <https://www.utsa.edu/crts/strech/> or scan the QR code below.

