



## Naima G. Sharaf

Assistant Professor of Biology and, by courtesy, of Structural Biology

### Bio

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#### BIO

Dr. Naima Gabriela Sharaf graduated from the University of North Carolina at Chapel Hill with a bachelor's degree in chemistry. She earned her Ph.D. in Dr. Angela Gronenborn's lab at the University of Pittsburgh, where she investigated inhibitor-induced conformational changes in HIV-1 reverse transcriptase using fluorine solution NMR. She completed her postdoctoral training at Caltech in Dr. Doug Rees' lab, where she used x-ray crystallography and single-particle cryo-EM to characterize the structure and function of the *Neisseria meningitidis* methionine ABC transport system. This study sparked Dr. Sharaf's current interest in lipoproteins, specifically their roles in bacterial physiology and potential in vaccine design. The Sharaf Lab conducts research that bridges biochemistry, biology, microbiology, and immunology in order to translate lipoprotein research into therapeutics.

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Biology
- Assistant Professor (By courtesy), Structural Biology
- Member, Bio-X
- Faculty Fellow, Sarafan ChEM-H

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Proteins embedded in bacteria's cell envelope conduct a variety of vital tasks, including signaling, nutrition uptake, and virulence factor export. Understanding the structure and functions of these proteins is essential for developing new therapies. The lab is currently focused on ABC transporters and lipoproteins of Gram-negative bacteria. Our long-term goal is to transfer fundamental lipoprotein research into new treatments.

### Teaching

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#### COURSES

##### 2023-24

- Frontiers in Biology: BIO 301 (Aut, Win)
- Integrative and Experimental Microbiology: BIO 120, BIO 220 (Spr)

##### 2022-23

- Frontiers in Biology: BIO 301 (Aut, Win)
- Integrative and Experimental Microbiology: BIO 120, BIO 220 (Spr)

2021-22

- Frontiers in Biology: BIO 301 (Aut, Win)

## STANFORD ADVISEES

### Doctoral Dissertation Reader (AC)

Meghan Nolan, Jacob Summers, Jiawei Sun, Jessica Zhang

### Postdoctoral Faculty Sponsor

Qianqiao Liu, Claire Stewart

### Doctoral Dissertation Advisor (AC)

Francesca Starvaggi

## Publications

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### PUBLICATIONS

- Characterization of the ABC methionine transporter from *Neisseria meningitidis* reveals that lipidated MetQ is required for interaction *ELIFE*  
Sharaf, N. G., Shahgholi, M., Kim, E., Lai, J. Y., VanderVelde, D. G., Lee, A. T., Rees, D. C.  
2021; 10