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Spring 2023 Series

Supercomputer Simulations Reveal How a Simple Redox Chemistry is Behind COVID-19 Severity

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Chemistry and Biochemistry

Wednesday
March 8, 2023
12:10 - 12:50 p.m.
CETL (VLL 1142)
Click here for livestream

Work in my research group took a dramatic turn during the 2020 COVID-19 lockdown. In collaboration with Dr. Hati and her research students, we started investigating the main players behind COVID-19 severity. We noted several disulfide bridges on the tip of the viral spike protein surface that binds to our cell surface receptors. Disulfide bridges are formed during elevated oxidative stress in our body. Eventually, our students used supercomputer simulations to show that the oxidation-reduction chemistry at the center of the spiraling oxidative stress is causing severity of the disease. The effort resulted in three highly cited peer-reviewed articles in 2020-2021.