



ACS Pittsburgh Local Section Proudly Presents
2021 Mildred Perry Memorial Lecture

Wednesday, February 17, 2021 at 7 PM

Zoom Meeting ID: 814 472 3373

Dr. Laura Ritchey

Department of Chemistry, University of Pittsburgh at Johnstown

“RNA in Plants, Viruses, and Vaccines: Connections to the COVID Vaccine”

Abstract: I will first briefly discuss my own research on some of the intricate complexities of rRNA in plants. Plants harbor chloroplasts within their cells to harvest energy from the sun. These chloroplasts contain rRNA that is distinct from the rRNA in the bulk of the plant cells. Chloroplast rRNA contains a “hidden break” such that the three-dimensional structure remains intact while the backbone is covalently cleaved. While the purpose of this phenomenon is unknown, results from our studies may help to elucidate mechanisms that allow plant survival under harsh conditions.

Following discussion of my research, I will discuss how RNA relates to the recent pandemic and vaccine development for SARS-CoV-2, the virus that causes Covid-19. The virus is composed of an RNA genome surrounded by a lipid bilayer that contains several proteins including the Spike protein, or S protein. The newly developed mRNA vaccines send instructions to our cells to make the S protein helping our immune system recognize this protein as foreign, producing antibodies to mount an attack against a SARS-COV-2 viral particle.

Biography: Laura started her faculty position in the Department of Chemistry at the University of Pittsburgh at Johnstown in August 2018. She received her B.S. in Chemistry with a concentration in biochemistry from Saint Francis University in 2013. She then received her Ph.D. in 2018 in chemistry from Pennsylvania State University under Philip Bevilacqua, where she focused on probing RNA structure genome-wide. At Pitt-Johnstown, Laura teaches the biochemistry sequence as well as general chemistry and enjoys working closely with her students on her research projects.

