2023 ABI Summer Internship Mentor List

SAMPLE

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1) SARS-CoV-2 (the virus that causes covid-19) has multiple steps involved in infecting cells. It must recognize a receptor, its S-protein must undergo a proteolytic cleavage event, and it's viral envelope must fuse with the host cell. The proteolytic cleavage domain in the S-protein "RRARSVAS" matches a domain in alpha-ENaC, a subunit of the human Epithelial Sodium Channel, which is cleaved by endogenous proteases. Most likely this allows SARS-CoV-2 to use endogenous proteases such as furin to cleave the S-protein and enter cells. Currently my lab is studying the effects of biological fluid compositions on this proteolytic process. We are also interested in how various conditions that exist in kidney disease effect viral envelope fusion, such as fluid electrolyte compositions, membrane cholesterol content, and body fluid redox state.
2) Interns would be involved in learning various laboratory techniques ranging from pipetting, bacterial culture, cell culture, recombinant DNA techniques, amidolytic assays, as well as general scientific skills such as writing, paper reading for a journal club, note-taking and data analysis and presentation to a scientific team. I expect to show students new techniques in person before expecting them to perform them in the lab.
3) ABI Mission Statement: "to improve the health of Arkansans through new and expanded agricultural and medical research initiatives." This project is in line with the ABI mission statement, with particular regard to 1) improving the health of Arkansans, and 2) being a medical research initiative. This project will help develop a deeper understanding of a disease which has been determined to be a global pandemic by the WHO, and which has infected many Arkansans and killed many others. It has affected the daily life of most to at least some degree.

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