



Proteomic Analysis of SARS-CoV-2 Infection of Airway Epithelial Cells

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Dr. Jackson is Professor in the Baxter Laboratory, Department of Microbiology and Immunology at Stanford University School of Medicine. He received a BA in Mathematics and Economics from Yale College before pursuing graduate work in Chemical Physics at the University of Chicago and receiving a PhD in Biophysics from Harvard University, completing his thesis on tyrosine kinase signaling with David Baltimore at MIT's Whitehead Institute. Following postdoctoral work at UCSF and Harvard Medical School with Mark Kirschner, studying the cell cycle, Dr. Jackson joined the faculty at Stanford in 1995. His laboratory studies focus on the biochemical and cell biological mechanisms controlling cell division, signaling and cancer, using proteomics and advanced imaging techniques. He has made a broad set of discoveries related to regulatory complexes and signaling in the cell cycle, ubiquitin-dependent proteolysis, cancer, signaling within the primary cilium and the link between cilia and human genetic diseases. Dr. Jackson spent from 2005 to 2013 at Genentech, where he was a Director and Staff Scientist focused on the discovery and validation of new targets for cancer chemotherapy. He is currently focused on understanding core mechanisms driving differentiation, especially in the context of ciliary signaling and using protein networks to find mechanisms and targets human genetic diseases, especially metabolic disease. The lab's recent work establishes a critical role for controlling metabolism and obesity via signaling in preadipocytes, endocrine pancreas and hypothalamus. In March 2019, the lab began to study SARS-CoV-2 discovering importance of airway cilia for presenting the ACE2 receptor and a new, fundamental pathway for how SARS-CoV-2 and other respiratory viruses cross the multiciliated airway to establish infection. The group also showed how the virus attacks pancreatic beta cells to induce diabetes in patients with severe COVID-19 disease.