

Dr. Gabriel A. Cook

Department of Chemistry

Dr. Gabriel A. Cook joined the faculty of the Department of Chemistry in 2014 after moving from the University of California San Diego where he worked as a Staff Scientist at the Center for NMR Spectroscopy and Imaging of Proteins. Dr. Cook graduated from Concordia University with a Bachelor's degree as a Biology major and Chemistry minor. He then attended Kansas State University where he obtained his PhD in Biochemistry in the lab of Dr. John Tomich. His research dissertation focused on the channel activity and structures of several channel-forming peptides derived from the human M2 glycine receptor in an effort to develop therapeutics for the treatment of channelopathies such as Cystic Fibrosis. He then moved to the University of California San Diego as a Post Doctoral Scholar in the lab of Dr. Stanley Opella where his studies focused on the structural and dynamic characterization of the membrane viroporin protein p7 from Hepatitis C Virus for the development of anti-HCV drugs.

His current lab is interested in determining the structure, dynamics and interactions of membrane glycoproteins. Glycoproteins are important proteins and are involved in nearly every biological function and although they play a vital role in cell-cell interactions, immune system recognition and regulation of cell structure very little is known about the effects of glycosylation on this family of proteins. Two of the proteins that his lab is specifically interested in are Sarcoglycan, involved in maintaining the integrity of muscle cells, and whose malfunction can lead to Muscular Dystrophy, and Syndecan, a protein used as a marker for several cancers including breast and prostate. His lab uses a combination of analytical and biophysical techniques including both solution and solid-state Nuclear Magnetic Resonance Spectroscopy to determine the structure, dynamics and protein-protein interactions of these important membrane proteins.

Dr. Cook is involved in several interdisciplinary collaborations and is a member of a number of professional organizations including the American Chemistry Society and the Biophysical Society.



Room 330D, HBRC
Oklahoma State University
Stillwater, OK 74078
405.744.5941 (p)
gabriel.cook@
okstate.edu