KANSAS STATE UNIVERSITY
*Department of Chemistry*

**King Hall 04**
**Thursday, Sept 5, 2019**
**1:30pm**
Coffee and Cookies provided & 1:15pm

# Chaperoning New Drugs that Treat Cancer and Protein Misfolding Diseases


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***Abstract***

Hsp90 is a molecular chaperone that is responsible for the conformational maturation of ~300 peptide substrates, most of which are involved in signaling cascades that are hijacked during malignant transformation. Consequently, Hsp90 represents a promising therapeutic target for the development of anti-cancer agents. Hsp90 is also the master regulator of the pro-survival heat shock response that provides cytoprotection for cells exposed to cellular stress. Therefore, Hsp90 can be a therapeutic target for the treatment of neurodegenerative diseases as well as glaucoma. Based on the natural products geldanamycin, radicicol, novobiocin and cruentaren A, small molecules have been discovered that can segregate these opposing properties and provide a platform for modern drug discovery efforts aimed at treating these diseases. The development of anti-cancer agents, neuroprotective agents, and anti-glaucoma treatments will be discussed and will highlight the polarizing role played by Hsp90 in various disease states.


***Biography***

Dr. Blagg received a B.A. in Chemistry and Environmental Studies from Sonoma State University in 1994. He then went on to earn a Ph.D. in organic chemistry from the University of Utah in the laboratory of Dale Poulter. Following the completion of his Ph.D., he was a NIH postdoctoral fellow at the Scripps Research Institute, wherein he studied in Dale Boger's laboratory until 2002.

Dr. Blagg began his independent research career as a medicinal chemistry professor at The University of Kansas, where he remained until 2017. In 2017, Dr. Blagg became the director of the Warren Family Research Center for Drug Discovery and Development at the University of Notre Dame and the Charles Huisking Professor of Chemistry and Biochemistry. His research focuses on the design, synthesis, and evaluation of HSP90 inhibitors.