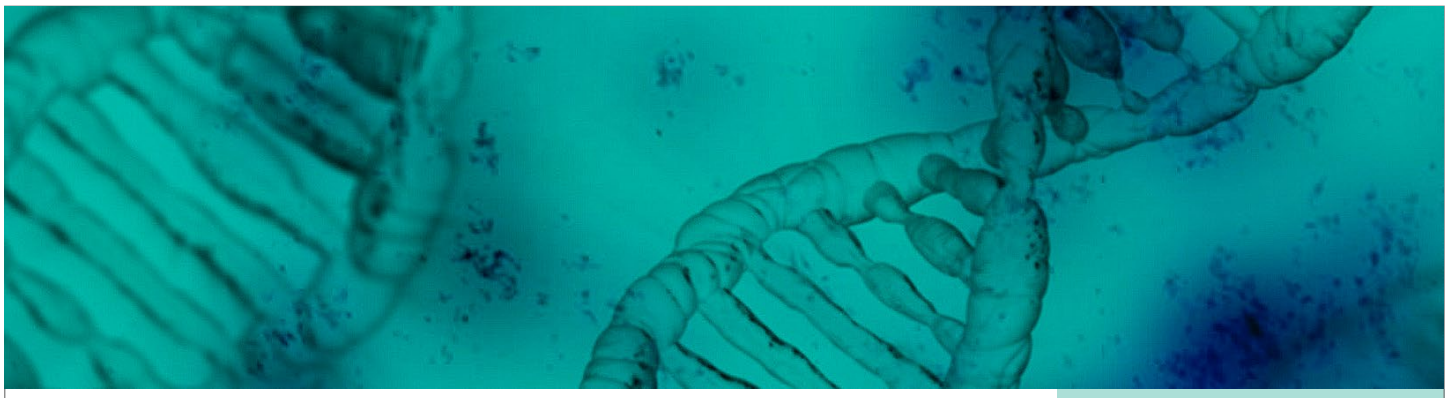


# THE PURDUE LECTURE HALL SERIES

## Thursday, April 1, 2021 @ 2:30pm

https://purdue-edu.zoom.us/j/91275614695?pwd=a09uUE81UGdydDNrbWtzTTFFcHdnQT09&from=addon

**Topic:** **New plot who dis? A pathogen's guide to surviving**
**Guest Speaker:** **Sebastian Kenny, PhD candidate, College of Science**

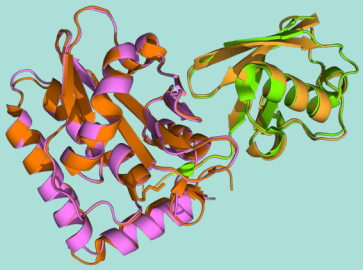
Ubiquitin is a small protein that is attached to other proteins. The attachment of ubiquitin to other proteins lead to various effects, ranging from the degradation of the attached protein, to a marathon that leads to the reparation of damaged DNA. Due to the importance of this small protein, the 2004 Nobel Prize in Chemistry was awarded to scientists for the discovery of ubiquitin-mediated protein degradation.

**So What?** Ubiquitin is only present in eukaryotic cells – that includes us, humans. What is interesting, however, is that prokaryotes (i.e., bacteria) and viruses have evolved to now produce proteins that alter how ubiquitin is attached! Time and time again, we find that many bacteria and viruses produce different proteins that alters ubiquitin signaling to survive in the cells, leading to the diseases that they cause.

**What am I doing?** The research focus in my lab is to determine how the proteins produced by these pathogens hijack the ubiquitin system. To do this, we want to know what these proteins look like (their structure). We also do biochemical and biophysical analyses to understand how these proteins work – how they bind to other proteins, how they perform their catalytic reaction, and so much more! The information I get from these studies help clinical researchers design the best therapeutics and drugs to target these pathogens.

*Kenny is currently a PhD Candidate in the Department of Chemistry at Purdue, working under the mentorship of Dr. Chitta Das. He is originally from Surabaya, Indonesia. He came to Purdue for his bachelor's degree, during which he performed organic chemistry research to develop contrast agents for blood clotting. Kenny is part of a biophysics training program, where he gets additional training on scientific literacy and experiment design. In his free time, Kenny enjoys going on a nature outing with his golden retriever, Benzene.*

**Sebastian Kenny,**
PhD Candidate



*Structure of a L. pneumophila effector with ubiquitin*

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