

## Webinar

9:00 AM (PDT)/12:00 PM (EDT) Thursday, January 27, 2021



***Prof. Melanie Ohi***

Affiliate Faculty, Biological Chemistry  
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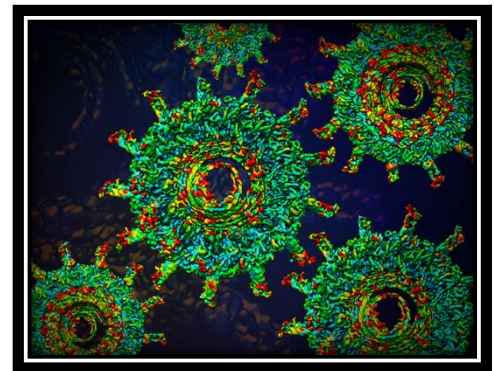


***Dr. Clarissa Durie***

Assistant Professor  
Department of Biochemistry  
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### **Structural analysis of the *H. pylori* and *L. pneumophila* type IV secretion system core complexes via Cryo-EM**

Bacterial pathogens are a threat to global health and have evolved elaborate strategies to infect their hosts, including the deployment of type IV secretion systems (T4SS). These membrane-embedded macromolecular machines transport proteins and DNA across multiple membranes to deliver cargo directly into host cells, thereby colonizing the hosts, transferring antibiotic resistance genes between bacteria, and forming biofilms. Across this broad, diverse family, there is little conservation between the components of T4SSs from different species. To understand how these machines operate, we must first define their components and architecture. By isolating the core complexes of endogenously expressed Cag T4SS



from *Helicobacter pylori* and Dot/Icm T4SS from *Legionella pneumophila* and determining their 3D structures using cryo-EM, we discovered previously unknown components and revealed distinctive structural features. This work leads to new mechanistic models and lays the foundation to rigorously test models for how the T4SSs in different pathogenic bacteria deliver a remarkably different cargo into host cells during pathogenesis.

All are welcome to attend. Registration is at no-cost, but sign-up is required:  
Registration Link: [https://us02web.zoom.us/webinar/register/WN\\_AFYhUQ-ERDeJv7dxIRZ\\_lw](https://us02web.zoom.us/webinar/register/WN_AFYhUQ-ERDeJv7dxIRZ_lw)

This webinar series is jointly hosted by the NIH Transformative High Resolution CryoEM Program Service Centers: the National Center for CryoEM Access and Training (NCCAT), the Pacific Northwest Center for CryoEM (PNCC), and the Stanford-SLAC CryoEM Center (S2C2) who provide no-cost access to cryoEM instrumentation and training. In this monthly series, we will highlight cryoEM methods and use the Q&A session after the seminar to stimulate discussion of best practices and interesting challenges that will be helpful to researchers new to the field. Representatives from all three service centers will also be on hand to answer questions about the CryoEM resources available to biomedical researchers and how to access them.