

# “Bacterial Multidrug Efflux Transporters”

171 Durham, October 6<sup>th</sup>, at 11:00 a.m.



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Infections caused by bacteria remain a leading cause of death worldwide. Although antibiotics remain a key clinical therapy, their effectiveness has been severely compromised by the development of drug resistance in bacterial pathogens. Multidrug efflux transporters – a common and powerful resistance mechanism – are capable of extruding a number of structurally unrelated antimicrobials from the bacterial cell, including antibiotics and toxic heavy metal ions, facilitating their survival in noxious environments. Transporters of the resistance-nodulation-cell division (RND) superfamily typically assemble as tripartite efflux complexes spanning the inner and outer membranes of the cell envelope. In *Escherichia coli*, the CusCFBA complex, which mediates resistance to copper(I) and silver(I) ions, is the only known RND transporter with specific to heavy metals. Here, we describe the current knowledge of individual pump components of the Cus system, a paradigm for efflux machinery, and speculate on how RND pumps assemble to fight diverse antimicrobials.

**Refreshments  
will be provided  
in 2061 Sweeney  
Hall at 10:30 a.m.**

*If you plan to attend,  
email a **question** to  
[bellinda@iastate.edu](mailto:bellinda@iastate.edu)  
and your question will be  
forwarded to the  
speaker!*

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