

Friday, February 16, 2018
3:30 pm at the College of Marine Sciences
MLS134, Conference Room, end of Penninsula.

Dr. Jeffrey Gralnick, University of Minnesota (<http://cbs.umn.edu/gralnick-lab/home>)
Title: **Evolutionary and Ecological Dynamics of Extracellular Electron Transfer**



Jeffrey Gralnick earned a PhD in Bacteriology from the University of Wisconsin- Madison studying microbial physiology and genetics with Diana Downs. After exploring iron homeostasis inside *Salmonella* cells he joined Dianne Newman's lab at Caltech in 2003 to study dissimilatory iron reduction catalyzed on the outside of the bacterium *Shewanella oneidensis*. In 2005 he started his research group focusing on microbial physiology and synthetic biology of environmental bacteria at the University of Minnesota where he is an Associate Professor in the Department of Plant and Microbial Biology and Director of the Microbial and Plant Genomics Institute.

Research:

Extracellular electron transfer by microbes is critical for the geochemical cycling of metals, bioremediation and biocatalysis using electrodes. *Shewanella oneidensis* is the best-understood dissimilatory metal reducing organism studied to date, yet puzzles remain to be solved regarding how it can breathe insoluble substrates. I will discuss recent advances in our understanding of extracellular electron transfer, our initial work to explore this strategy in natural environments and evidence that flavin electron shuttles can mediate electron transfer between organisms in an engineered microbial community.