

Metals in Biology; Spring 2021; BMB 961/ MMG 803/CMB 800

9:10-10 am Tuesdays and Thursdays via Zoom

date	presenter	topic
Introduction		
19-Apr	Hausinger	Class Overview/Key Biological & Chemical Concepts
Electron transfer		
21-Jan	Hegg	Iron-Sulfur (FeS) Clusters
26-Jan	Hegg	Blue Copper Proteins, the Diccopper CuA Site, & Electron Bifurcation
Metal toxicity		
28-Jan	Hausinger	Nickel Toxicity
2-Feb	LaPres	Cobalt Toxicity
Calcium		
4-Feb	Hausinger	Calcium Biochemistry and the EF-Hand Motif
Nickel Sensing, Transport, Trafficking, and Enzymes		
9-Feb	Hausinger	Nickel Homeostasis and Transport: The <i>nik</i> Operon
11-Feb	Hausinger	Nickel Enzymes and Ni Metallocenter Assembly
Oxygen Activation		
16-Feb	Hegg	Peroxidases and the Cytochromes P450
18-Feb	Hausinger	Non-Heme Iron Enzymes
23-Feb	Hegg	O ₂ Transport & Activation by Dinuclear Copper Enzymes
25-Feb	Hegg	Cytochrome c Oxidase/take-home quiz
2-Mar	none	University class break day
Non-Nickel Metal Sensing, Transport, and Trafficking		
4-Mar	O'Halloran	Molecular Mechanisms of Cellular Metal Regulation and Trafficking
9-Mar	Hegg	Iron Transport and Storage
11-Mar	Hu	Zinc Transporters
Medical Aspects of Metals		
16-Mar	Hausinger	Metals in Medicine: cis-Platinum
18-Mar	O'Halloran	Quantitation and Visualization of Metals in Cells
23-Mar	Hammer	Nutritional Immunity: Metals at the Host-Pathogen Interface
Metal-Dependent Biological Processes		
25-Mar	Hegg	Oxygen-Evolving Complex (OEC) in Photosystem II
30-Mar	Hegg	Denitrification
1-Apr	Hegg	Nitrogenase (Biological N ₂ Fixation at FeMoco)
6-Apr	Hausinger	Hydrolysis of Nucleic Acids, Proteins, and Small Molecules
8-Apr	Hegg	Metalloenzymology of Biogeochemical Cycles/take-home quiz
Student Presentations		
13-Apr	tba	tba
15-Apr	tba	tba
20-Apr	tba	tba
22-Apr	none	University class break day (unless all agree to meet)
27-Apr	tba	3 pm to 5 pm, final student talks