CHEMISTRY/BMB 567
Bioinorganic Chemistry
Spring Semester, 2020

Main Goals:	Gain skill in reading, discussing, and presenting literature on many topics of current interest in bioinorganic chemistry.
Instructor:	Ivan Dmochowski "Dr. D." (room 348, Chemistry, N73 bldg) e-mail: ivandmo@sas.chem.upenn.edu
Main Text:	Biological Inorganic Chemistry: Structure and Reactivity by Bertini, Gray, Stiefel and Valentine
Additional Material:	Articles from the scientific literature will be assigned throughout the semester and made available on Canvas.
Scheduled Lectures:	Mon+Wed 10:30-noon, CHEM B13
Material on Reserve:	1) main text 2) Principles of Bioinorganic Chemistry by S. J. Lippard and J. M. Berg 3) Inorganic Biochemistry, 2nd Edition by J. A. Cowan 4) Physical Methods in Bioinorganic Chemistry Ed. L. Que, Jr. 5) The Biological Chemistry of The Elements by J. J. R. Frausto da Silva and R. J. P. Williams 6) Fundamentals of Biochemistry, 5th Edition by D. Voet, J. G. Voet, C.W. Pratt 7) Inorganic Chemistry, 4th Edition by J. E. Huheey, E.A. Keiter, R.L. Keiter
Grading Weight:	Weekly 1-Page Paper Synopsis, 20% Module Homework, 20% Oral Presentation (20 min + questions), 20% Midterm (Wed, March 4, in class), 20% Final Exam (TBA, in B13), 20%
Assigning Grades:	A = 85% or higher A- = 80-84%

B+ = 77-79%
B = 73-76%
B- = 70-72%
C+ = 66-69%
C = 65% or lower

Office Hours: Mondays, noon-1pm. I have "Open Door" policy--anytime you have questions, just stop by or email to make appointment!

Exam Policy: No cell phones or other electronic devices other than calculators should be accessible during exams.

Collaboration Policy: You are encouraged to discuss all assignments with your classmates and to study together for the exams. HOWEVER, ALL SUBMITTED WORK SHOULD BE YOUR OWN WORK, IN YOUR OWN WORDS. Ideas that you find in published sources, including the web, should be correctly attributed to the source. If you are not sure what constitutes plagiarism, make sure to discuss this with me!!

Student Conduct: *I take plagiarism and cheating very seriously, especially in a graduate-level course. Any case of suspected cheating will be referred to the Office of Student Conduct.*

Topics To Be Covered:

Week	Dates	Topic	Book Chapters
1	Jan. 15	Introduction, Metal Bonding	BIC Chapter 2; Lippard & Berg Ch. 1+2, T.II
2	Jan. 20+22	**NO CLASS (MLK Day)** / Metal Bonding 2	T.II, Lipp & Berg Ch. 2
3	Jan. 27+29	Metal Bonding 3 / Intro to Proteins	Chapter 3 + T.I
4	Feb. 3+5	Intro to Nucl Acids / Catalytic Nucleic Acids	Chapter 9.5
5	Feb. 10+12	Metal Ion Transport / Probing the Metallome	Chapter 5 / Select Readings
6	Feb. 17+19	Metal Storage (Transferrin & Ferritin) / Siderophores	Chapter 8.1-2 / 8.3
7	Feb. 24+26	Metallothionein / Chaperones, ATPases	Chapter 8.4 / 8.5
8	March 2+4	Redox Proteins 1 / **MIDTERM**	Chapter 10.1
9	March 9+11	**SPRING BREAK**	
10	March 16+18	Redox Proteins 2 / Redox Proteins 3	Chapter 10.1
11	March 23+25	Electron Transfer 1 / Electron Transfer 2	Chapter 10.2
12	March 30 + April 1	Electron Transfer 3 / Respiration	Chapter 10.2 / 10.3
13	April 6+8	Intro to Photosynthesis / Photosystem II	Chapter 10.4
14	April 13+15	Peroxidase + Catalase / Cytochrome P450	Chapter 13.2, 13.3 / 11.5
15	April 20+22	Nitrogenase / Hydrogenase	Chapter 12.3 / 12.1
16	April 27+29	Green Redox Chemistry / Metallodrugs	Selected Readings / Chap 7