ME:330.712: "Introduction to Glycobiology" 2017
9:00a; Room 612 Physiology; JHUSOM

DATE*		LECTURE	FACULTY
Mar 27	Mon	Saccharides & The Glyco World	Dr. R. Schnaar
Mar 28	Tue	Glycoproteins 1	Dr. N. Zachara
Mar 29	Wed	Glycoproteins 2	Dr. N. Zachara
Mar 30	Thu	O-GlcNAc	Dr. G. Hart
Mar 31	Fri	Glycolipids & GPI anchors	Dr. R. Schnaar
Apr 3	Mon	Carbohydrate Engineering	Dr. K. Yarema
Apr 4	Tues	Hyaluronan & Proteoglycans	Dr. N. Zachara
Apr 5	Wed	Protein-Glycan Recognition	Dr. R. Schnaar
Apr 5*	Wed	Glycan Binding Protein Functions	Dr. R. Schnaar
Apr 6	Thu	Glycomics (Analytical Glycobiology)	Dr. G. Hart
Apr 6*	Thu	Glycans & Disease	Dr. G. Hart

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*All lectures except those with an asterisk (*) are 9:00-10:30am. Those with an asterisk will follow the first lecture on that date (10:30a-noon).

Contacts:

Course co-directors:

Ronald Schnaar (schnaar@jhu.edu)
Natasha Zachara (nzachara@jhmi.edu)

Additional Lecturers:

Gerald Hart (gwhart@jhmi.edu)
Kevin Yarema (kyarema1@jhu.edu)

Texts of interest:

Introduction to Glycobiology, Third Edition (2011) M.E Taylor & K. Drickamer, Oxford University Press, New York.

Essentials of Glycobiology, Second Edition (2009) A. Varki, et al., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. Content freely available at: http://www.ncbi.nlm.nih.gov/books/NBK1908/

COURSE OBJECTIVES

Learn the basic language of glycobiology

- Monosaccharides (vertebrate)
- Glycans (glycoproteins, glycolipids, proteoglycans)

Learn of diverse glycan functions

- Glycans in glycoprotein activity, folding, trafficking
- O-GlcNAc-mediated regulation
- Glycolipids in membrane recognition & regulation
- Proteoglycans in the extracellular matrix
- Glycan binding proteins in cell & molecular recognition

Learn the basic concepts of glycan biosynthesis

Learn the basic tools of glycomics (analysis)

COURSE EVALUATION

- Take home exam for students taking the course for credit
- A choice of published papers will be provided. Students will choose one and write a critical review discussing how the work in that paper: (i) arose to extend prior knowledge in the field; (ii) used or expanded analytical technologies in the field; and (iii) provided novel insight in the field. Finally, students will propose a "next step" to extend the new findings.

Students with Disabilities

All students with disabilities who require accommodations for this course should contact Catherine L. Will, Disability Services Coordinator for Graduate Biomedical Education (cwill@jhmi.edu or 410-614-3781) at their earliest convenience to discuss their specific needs. Please note that accommodations are not retroactive.