

## TENTATIVE SCHEDULE

### ME:330.712: "Introduction to Glycobiology" 2018

9:00a; Room 612 Physiology; JHUSOM

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<u>DATE*</u>		<u>LECTURE</u>	<u>FACULTY</u>
Apr 9	Mon	Saccharides & The Glyco World	Dr. R. Schnaar
Apr 11	Wed	Glycoproteins 1	Dr. N. Zachara
Apr 13	Fri	Glycoproteins 2	Dr. N. Zachara
Apr 17	Tue	O-GlcNAc	Dr. G. Hart
Apr 19	Thu	Hyaluronan & Proteoglycans	Dr. N. Zachara
Apr 23	Mon	Glycolipids & GPI anchors	Dr. R. Schnaar
Apr 25	Wed	Carbohydrate Engineering	Dr. K. Yarema
Apr 27	Fri	Protein-Glycan Recognition	Dr. R. Schnaar
May 1	Tue	Glycan Binding Protein Functions	Dr. R. Schnaar
May 3	Thu	Glycomics (Analytical Glycobiology)	Dr. G. Hart
May 7	Mon	Glycans & Disease	Dr. G. Hart

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All lectures are 9:00-10:30am.

#### 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, Third Edition* (2017) A. Varki, et al., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. Content freely available at: <http://www.ncbi.nlm.nih.gov/books/NBK310274/>

## 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](mailto:cwill@jhmi.edu) or 410-614-3781) at their earliest convenience to discuss their specific needs. Please note that accommodations are not retroactive.*